

THE AMERICAN MEDICAL MONTHLY.

SEPTEMBER, 1856.

ESSAYS, MONOGRAPHS, AND CASES

The Symptomatic Value of the Arcus Senilis ; with a Tabulated Statement of 72 Cases. Read before the N. Y. Medico-Chirurgical Society, by BENJAMIN LEE, A.M., M.D., Assistant Physician to the Colored Home, Junior Assistant to Bellevue Hospital.

Among the indices of the approach to each individual of the human race of "the day when the keepers of the house shall tremble, and the strong men shall bow themselves, and the grinders cease because they are few, and those that look out of the windows be darkened," is the mysterious bow which spans the spheres of those windows themselves,—the bow, not of promise, but of warning, γερωντοξον, the "old man's bow."

This phenomenon, more usually known under its Latin name of *arcus senilis*, has been the subject of remark by careful observers of the signs of the times of life in all ages : indeed, so palpable an alteration in the appearance of so important an organ, and so noticeable a feature of the human face, could hardly have escaped the observation of even the careless and unscientific. It has usually been noticed as curious and mysterious, has been considered as an evidence of advanced age, or at least of the arrival of the time when the powers of life were beginning to decline ; but being found to be of little or no injury to the organ of sight itself, save in a few exceptional

and very aggravated cases, it has been dismissed with a cursory glance, and perhaps a moral reflection.

The importance, however, which has of late years been given to the study of pathological anatomy, by the laborious and successful researches of Rokitansky, of Andral, Cruveilhier, and others not less eminent, has led to investigations more or less careful, into the character of the abnormal condition which gives rise to this appearance. The theories which have been advanced on this point are various, nearly every oculist having invented or sought out one for himself; while a few who made it the subject of careful microscopic examination, arrived at results more or less approximating to one another and to the truth. *One "states the arc to be composed of a firmer and more opaque substance than that of which the cornea is originally formed, arising from an impaired action of the secretory vessels, which cease to pour out healthy corneal matter." †Another unhesitatingly declares it "a deposit of lymph, formed perhaps by a slow chronic inflammation;" while a ‡third, wiser and honester, frankly confesses his inability "to offer an explanation." The subject remained open for discussion until the publication, in the *London Lancet* for 1850 (Vol. II, p. 363), by Mr. Edwin Canton, Surgeon, of an able article, in which he announces the discovery that the arcus senilis is nothing more or less than one development of that all-pervading disease, fatty degeneration; that the annular or arciform opacity is the result of the deposit in that situation of fat globules, or to use his own language, "the presence of innumerable oil drops in the substance of the corneal tissue." He tells us farther, that "it is only the cornea proper which is so invaded,—the posterior elastic lamina, together with that beautifully arranged fibrous cordage and anterior lamella, discovered and described by Mr. Bowman, being unimplicated in the change." Had Mr. Canton stopped here—had he contented himself with settling finally a mooted question of pathological anatomy, even in what might seem this petty and trifling instance, he would still have merited the thanks of the

* Mr. Walker, in the *London Lancet* for 1840.

† Mr. Hays, *American Journal of Medical Science*, Vol. III.

‡ Mr. Tyrrell, on "Diseases of the Eye."

profession for this result of his careful and systematic labors. For every step in the march of positive truth, is a something gained really, definitely, and forever ; and is of more value to the cause of true science than a hundred vague and baseless theories, however brilliant, elaborate, or ingenious. But this discovery bears upon it the stamp of truth, and of greatness. in that while it closes definitely one field of investigation, it serves at the same time to open another, wider and more practically useful than the last. And Mr. Canton showed himself imbued with the true spirit of discovery, in that, not satisfied with the addition he had already made to the knowledge of his profession, at once appreciating the important bearings of this new outpost on the frontiers of science, he pressed boldly forward to occupy it. Its prominent idea may be stated as follows : If the arcus senilis do consist of fatty deposit, the result of degeneration of the normal tissue of the cornea, what connection has this local lesion with systemic fatty degeneration, and what with this disease in the several organs? If we find it even *generally* accompanying, as one manifestation, widely extended vice of the system, and especially that vice as laying its surely though slowly paralysing grasp on the essential organ of the circulation,—then we have this deviation from the normal standard, apparently trifling and harmless, *per se*, becoming of exceeding importance as a symptom, and a *diagnostic* symptom of another great, pernicious, and ultimately fatal deviation. To the solution of these questions Mr. Canton early devoted himself. In this first paper he states his queries and conclusions on the subject as follows : “It would be interesting to learn whether, in those cases of fatty degeneration of the heart, which have of late years been recorded as occurring under the age of forty, there existed in the eyes any trace of that appearance which is indicative of the like condition of the cornea. I have *in no instance* found this senile arc, when well developed, *unaccompanied by fatty degeneration of the heart*. I may remark, however, that it appears to me not an improbable idea that if the arcus adiposus be found in early life, or before the age of forty, its presence is likely to be recognized in persons whose hearts suffer from fatty degeneration.” In his second article on this subject, in the next vol-

ume of the *Lancet* (I of 1851), he says, referring to the above quoted assertion: "Since penning these observations I have had frequent additional opportunities of inquiring into the subject, and find them to be more fully borne out by extended observation." A little further on he adds this important conclusion, "In endeavoring to establish the validity of this position, from frequent post mortem inquiry, I found that the heart is, of all other organs, the one which most invariably presents fatty degeneration where the arcus exists; and the extent of change in the cornea, I believe I have good reason to say, may be regarded as a *measure of the degree* to which the heart fibre has, in the same manner, become changed."

In the course of a few years this theory was adopted by many eminent pathologists, and we find Paget saying in his "Lectures on Surgical Pathology," "In short, the arcus senilis seems to be, on the whole, the best indication which has yet been found of proneness to an extensive or general fatty degeneration of the tissues." Mr. Barlow, before the Pathological Society of London, says, "It is always of importance to notice the presence or absence of the arcus senilis in cases of fatty degeneration. This form of fatty degeneration has already proved useful in diagnosing the like change in the heart. The arcus is the *only indisputable external sign* of true fatty degeneration, and, carefully interpreted, will be found in many difficult circumstances a clue to the destruction proceeding within." With this weighty testimony in favor of Mr. C.'s theory, in addition to his own elaborate and convincing articles, the subject could scarcely be considered as still open to argument, and the investigation of which this paper is the result, was undertaken not so much to test the validity of the claim, as to call the attention of members of the Society to so important a discovery, which has, as yet, I believe, received but little notice on this side the water. And I have thought that no way offered, more sure of attracting and deserving attention, than the arrangement, in the table form, of the statistics of those cases which have fallen under my notice. I may premise that the patients from whom these observations were taken are all of them colored, of more or less purity of blood, inmates of the Colored Home and its Hospitals.

A Tabulated Record of 72 Cases of Arcus Senilis.

No.	Sex.	Age	Arc.	History.	State of Heart.
1	Male.	30	Above and below.	Has phthisis pulmonalis. Rheumatic pains during the past 3 months.	A slight clack with 1st sound. Impulse normal.
2	Male.	30	Slight above.	Phthisis. Died May 18th.	Signs of enlargement with dilatation. Post mortem.—Large, soft, flabby, with some fatty degeneration.
3	Male.	31	Very marked above and below.	Rheumatic for 12 years. Incipient phthisis. Tongue flabby, and indented by teeth. Died suddenly of acute pleurisy, with effusion. Liver small, with patches of fatty degeneration.	Post mortem.—Heart large; large amount of fat anteriorly, less posteriorly. Decided fatty degeneration.
4	Female.	32	Slight above.	Was treated for anæmia, with blowing sound, a year ago, successfully. Now prostrate and anæmic to the last degree. Dyspnoea. Died April 15, in a fit of syncope. Incipient phthisis. Post mortem.—Kidney, fatty and cystic. Large fibrous tumor of the uterus. An unusual amount of normal fat. Liver, fatty degeneration throughout.	A peculiar clack heard with first sound, over aortic valves. Post mortem.—Heart slightly hypertrophied. No valvular disease. Pale, very flabby, utterly drained of blood. Considerable fatty deposit on anterior wall, and fatty degeneration.
5	Male.	32	Slight above and below.	Tongue flabby. Rheumatic for eight years.	Normal.
6	Male.	32	Circle.	Rheumatism occasionally for 9 years. Occasional pain in right side. "No hard sickness."	Slight blowing sound. Impulse strong.
7	Female.	33	Circle faint.	Sick, off and on, for 2 or 3 years, during which troubled with palpitations. Has had œdema of lower extremities. Rheumatic.	First sound abrupt, and with a clack.
8	Female.	44	Above.	"Has been sick ever since she was born." Palpitations for 3 years. Has had several fevers. Severe rheumatic pains.	Sounds weak, but normal.
9	Female.	45	Above and below.	Rheumatic since quite young. Has had ascites and anasarca. Very fat.	Second sound abrupt.
10	Female.	45	Marked. Circle broader at sides.	Subject to epilepsy. Had acute rheumatism 3 years since, now chronic. Œdema of lower extremities. Palpitations. An opium eater. Died April 24, of apoplexy. Post mortem.—A large clot on left side of brain. Arteries of brain extremely atheromatous. Kidneys atrophied and granular. Liver hypertrophied.	Sounds loud, but confused with bellows murmur.—Post mortem.—Heart hypertrophied.—Aorta and its valves atheromatous.
11	Male.	46	Circle.	Rheumatic for 20 years. A hard drinker.	Sounds and impulse very weak.
12	Male.	46	Below.	Intense rheumatic and neuralgic pains, especially about neck and arms. Rheumatic for 9 years. Has suffered from pains in the jecoral region. Very wakeful.	First sound rough. Action quick.
13	Female.	46	Circle faint	Rheumatic for past year.	Normal.
14	Male.	46	Slight above.	Has had palpitations for 5 or 6 years. Great general œdema, now being reduced. Gangrene of toes, probably the result of arterial ossification.	First sound blowing over aortic valves. Second, sharp, abrupt, slightly roughened.
15	Male.	48	Circle. Marked	Rheumatic for 10 or 12 years past. Threatened with phthisis.	Normal.

A Tabulated Record of 72 Cases of Arcus Senilis. (Continued.)

No.	Sex.	Age	Arc.	History.	State of Heart.
16	Female.	48	Slight above.	Entered 2 months since, with debility, which has gradually increased, resulting in a decadence of the vital powers, and a lingering death without apparent cause. Treated as incipient phthisis. Post mortem.—Liver slightly fatty. Kidneys ditto. A large fibrous tumor of the uterus. Tubercles in lungs, and lymphatics in earliest stage.	Sounds indicate disease of aortic valves. Post mortem.—Heart small, slightly fatty, calcareous deposit above aortic and at base of mitral valves.
17	Female.	49	Above.	Rapid phthisis. Died Dec. 4th. Post mortem.—Liver large, light colored, fatty. Kidneys softened. Fibrous tumors of uterus. Usual health good.	Post mortem.—Heart soft, flabby, and somewhat fatty. Pale.
18	Male.	49	Above slight.		Normal.
19	Female.	50	Circle. Marked broad.	Thirty-two years since had anasarca; recovered under mercurial treatment. Palpitations for many years. Slightly rheumatic.	Pulse weak. Heart, impulse strong, action labored. Intermittence. Roughness of both sounds with abruptness of second.
20	Female.	50	Circle.	Rheumatic for 3 years; slightly so much longer. Ascites many years since. Now, œdema of lower extremities. Palpitations for a few weeks past.	First sound slightly roughened.
21	Male.	50	Above, broad but indistinct.	Has generally enjoyed good health.	First sound slightly blowing. Intermittents.
22	Female.	50	Circle. Very marked.	Rheumatic for six years.	Normal.
23	Female.	50	Above slight.	Palpitations for 5 years No rheumatism. Ædema and ascites a few years since.	Slight prolongation of first sound.
24	Male.	53	Circle dim.	Phthisis. Ascites a year since. Died June 22d, 1856.	Roughness of second sounds. Post mortem.—Large, pale, flabby, somewhat fatty.
25	Female.	55	Circle marked.	Has had a good deal of sickness. Rheumatic for several years. Had then palpitations, œdema of lower extremities, and wakefulness. Now much debilitated. Hemiplegia. Rheumatic for several years.	Impulse strong. Slight blowing with first sound; second abrupt.
26	Female.	55	Circle very marked.		Impulse strong. Loud soufflé with first sound.
27	Female.	55	Circle very narrow.	Has had a good deal of sickness. Palpitations and dyspœa on slight exercise. Until recently very wakeful.	First sound sawing over the mitral valve.
28	Male.	56	Circle.	Rheumatic for 7 years.	Normal.
29	Male.	56	Circle.	Rheumatic for 7 years. Tongue flabby; marked by teeth.	First sound prolonged.
30	Male.	58	Circle dim.	Has had typhus. Now feeble and rheumatic. A hard drinker.	Roughness of second sound.
31	Female.	60	Circle.	Ascites at the age of 30. Rheumatism two years since.	Normal.
32	Female.	60	Circle very broad.	Rheumatic for 30 years. Troubled with occasional vertigo and palpitations.	First sound rough; second abrupt. Impulse weak.
33	Female.	60	Circle dim.	Rheumatic for several years. Has had palpitations for some time.	First sound rough.
34	Female.	60	Circle dim.	Rheumatic for 20 years. "Cold rheumatiz." Palpitations.	Impulse weak; irregular.
35	Female.	60	Circle very marked.	Rheumatic. Childish. Bowels excessively constipated.	Intermittent. Second sound rough.
36	Male.	62	Slight above and below.	General health good.	Somewhat irritable.

A Tabulated Record of 72 Cases of Arcus Senilis. (Continued.)

No.	Sex.	Age	Arc.	History.	State of Heart.
37	Female.	62	Circle dim.	Palpitations for 20 years. Considerable dyspnoea. Remarkable aneurismal developments. 24 on arteries above heart. Rheumatic for 15 years. Occasional oedema of lower extremities. Ascites 11 years since.	Low sawing with musical whistle over tricuspid, and pulmonary valves, with 1st sound; less with second. Blowing over aorta; sounds somewhat blended. No interval.
38	Female.	64	Circle, broad above.	Severe attacks of fever. Rheumatism for 22 years. Since, ship fever, dyspnoea, with palpitations 11 years.	Sawing with both sounds over aortic valves; louder with 1st. Sawing with second over mitral valve.
39	Female.	65	Slight above.	No rheumatism or palpitations.	Normal.
40	Female.	65	Circle, m'rk'd but narrow.	General health good.	Sounds weak. Second abrupt.
41	Female.	65	Right eye, narrow circle. Left, slight upper arc.	Has suffered much from inflammation of right eye. None of left. At the age of 40, anaemic; supposed to be consumptive.	First slightly blowing. Second abrupt.
42	Male.	66	Circle dim.	Rheumatic for 6 or 7 years past.	Normal.
43	Female.	67	Circle marked.	Paralysis for 10 years. Health usually poor. Palpitations for 3 years. Has had ascites with hepatic derangement. Wandering pains since paralysis.	First sound prolonged.
44	Male.	69	Circle.	General health good. Now threatened with phthisis. Dyspnoea. Toper.	Normal.
45	Female.	69	Circle, broad, marked.	Fever. Rheumatic from her youth. Palpitations.	First sound rough. Second abrupt.
46	Male.	70	Circle dim.	Phthisis. Previous health good. Somewhat rheumatic.	Blowing with first sound, and roughness. Second abrupt.
47	Female.	70	Slight above and below.	General health good. No rheumatism.	Normal.
48	Female.	70	Circle, broader at sides.	General health good. Slight insanity.	Intermittence.
49	Female.	70	Circle dim.	Fatty tumor on arm. Hemiplegia.	Normal.
50	Female.	70	Very faint, upper.	Has suffered much from articular rheumatism.	Normal.
51	Female.	70	Very white circle. No interspace of cornea.	Not much rheumatism.	Impulse strong.
52	Female.	70	Circle.	General health good. No rheumatism, dyspnoea, or palpitation.	Slight roughness of 1st sound.
53	Female.	71	Above, extending below mesial line.	Fever. Rheumatism. Formerly troubled with palpitations.	Impulse slight. First sound abrupt.
54	Female.	71	Above.	Twice salivated. No rheumatism. Palpitations and dyspnoea for 6 years.	Sounds normal. Impulse weak.
55	Male.	72	Circle.	Good health till an attack of rheumatism, a few years since.	Normal.
56	Female.	72	Circle dim.	Palpitations. No rheumatism.	Blowing sound slight, followed by a clack with 1st sound, heard over mitral valve.
57	Male.	73	Circle.	Rheumatic for 30 years.	Normal
58	Female.	75	Circle dim.	Rheumatic for upwards of thirty years. Vertigo.	Impulse weak.
59	Female.		Circle.	Rheumatic for several years. Occasional dyspnoea. Palpitations formerly.	First sound slightly roughened
60	Female.	75	Circle narrow.	Rheumatic for many years. Palpitations and dyspnoea.	Impulse weak. Sounds normal.

A Tabulated Record of 72 Cases of Arcus Senilis. (Continued.)

No.	Sex.	Age	Arc.	History.	State of Heart.
61	Female.	76	Circle very marked.	Rheumatic for 10 years. Palpitations for 2 or 3 years.	Second sound rough.
62	Male.	76	Circle broad above.	Fevers. At one time edema of lower extremities. Rheumatism for 3 years.	Sounds and impulse weak.
63	Female.	77	Circle irregular on right eye; arc, on one side of left eye.	Little rheumatism or palpitation. Considerable ophthalmia.	Normal.
64	Female.	78	Circle.	Little sickness except rheumatism 18 years ago. Palpitations and dyspnoea, with debility. Somewhat relieved by tonics.	First sound slightly rasping.
65	Male.	80	Circle dim. narrow.	Asthmatic for 2 years. Ship fever and cholera.	Slight roughness and abruptness of second sound.
66	Female.	80	Circle dim.	General health good.	Normal.
67	Female.	80	Circle.	Slightly insane.	Not determined.
68	Female.	80	Above slight.	No rheumatism or palpitations. "Hearty and well, thank the Lord!" Cataract in both eyes.	Normal.
69	Female.	90	Circle very marked.	Rheumatic for 8 years. Attributes it to salivation. Generally healthy. Fleeshy.	Normal.
70	Male.	90	Above faint.	Died in a state of coma soon after admission. Liver nutmeg, not fatty to any extent. Kidneys slightly cystic, congested and softened.	Post mortem.—Very slightly fatty. Enlarged. Calcareous deposit on aortic and mitral valves.
71	Female.	100	Circle broad.	"Has had enough o' rheumatiz." Otherwise healthy.	Normal, but weak.
72	Male.	105	Circle marked.	General health good.	Slight roughness with first sound.

Synopsis of Tables.

Premature.—Number of cases under 45 years of age, 8: Nos. 1 to 8 inclusive. Do. between 45 and 55 years of age, with marked arc, 12: Nos. 9, 10, 11, 13, 15, 19, 20, 21, 22, 24, 25, 26, 27.

Number of cases with arc of local origin, 2: Nos. 41, 63.

Number of cases with arc irregular, 6: Nos. 10, 12, 46, 48, 51, 53.

Number of cases exhibiting abnormality in sounds or action of heart, 46: Nos. 1, 2, 3, 4, 6, 7, 8, 10, 12, 14, 16, 18, 19, 20, 21, 23, 24, 25, 26, 27, 30, 32, 33, 34, 35, 36, 37, 38, 40, 41, 43, 45, 46, 48, 52, 53, 54, 56, 58, 59, 60, 61, 62, 64, 65, 71, 72.

Number of cases exhibiting palpitations or dyspnoea, 21: Nos. 4, 7, 8, 10, 19, 20, 23, 27, 32, 33, 34, 37, 38, 43, 44, 45, 53, 54, 56, 59, 60.

Number of cases subjects of post mortem examination, 8: Nos. 2, 3, 4, 10, 16, 17, 24, 70.

Number of cases subjects of phthisis pulmonalis, 8: Nos. 1, 2, 3, 4, 16, 17, 24, 46.

Number of cases in which slight lesion of heart co-exists with slight arc, 9: Nos. 36, 39, 47, 50, 51, 63, 66, 68, 70.

Number of cases in which marked lesion of heart co-exists with marked arc, not premature, 6: Nos. 19, 20, 32, 38, 43, 45.

Number of cases the subjects of vague pains, 40: Nos. 1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 20, 22, 25, 26, 28, 29, 31, 32, 33, 34, 36, 38, 42, 43, 45, 46, 53, 55, 57, 58, 59, 60, 61, 62, 69, 71.

It will have been noticed that age has been made the standard on which the classification has been based. This was deemed advisable, as showing more readily the distinction between the normal and abnormal cases, so to speak,—between those in which the arc is a sign of disease, and those wherein it is merely an accompaniment of age. Viewing them with regard to this point, it will be observed that of the whole seventy-two, eight (one-ninth of the entire number,) are below forty-five years of age. Now, forty-five has generally been considered to be the age at which the first faint outline of the arcus might be expected to make its appearance; not that we shall invariably see it at so early an age, but that in an ordinary state of things, it would not certainly appear earlier. To these we must add those in whom its presence is noted in a marked and advanced degree, as where we have both upper and lower arcs, strongly marked, or uniting to form a circle (or more properly an ellipse), while yet but a few years beyond this limit, (say for example ten years,) indicating, as it must be supposed to do, its origin at a date considerably antecedent to that which observation has determined to be the usual one. Of such, viz: those between forty-five and fifty-five, in whom the arc is strongly marked, and hence of considerable duration, we have twelve; which, added to the former eight, give us twenty,—an approach to one-third of the entire number, as the number of those in whom the arc was decidedly premature. The proportion is certainly a large one, and it is from this class that we are to gain the most information with regard to the point at issue.

I say then, that, in these cases, unless we can find some local cause for the lesion, we must suppose it to be the index of internal disease widely disseminated through the system; and according to Mr. Canton this disease is fatty degeneration, which has already attacked the most vital of all the viscera, the grand central organ of the circulation. The local causes which may give rise to this phenomenon, are inflammations of the various tissues of the eye, whether directly involving the cornea or not. It only requires that the circulation of the part be interfered with.

If merely of local origin, there will usually be some irregularity in its appearance, which will lead to this suspicion,

which the patient's previous history will decide. This irregularity may consist in a greater development in one eye than in the other, in a want of uniformity in its shape, presenting a broken, interrupted appearance, or in its situation in an unusual part of the cornea. Such cases are numbers 41 and 63. The former of these, Diana Lane, sixty-five years of age, presents in the right eye a circle complete, though very narrow for its entire circumference, and wanting that proportional increase of breadth above and below which should characterize the union of the two arcs; while in the left we have but a slight upper arc. Upon inquiry, we find that she has suffered from repeated attacks of inflammation in the right eye, while the left has always escaped. In the latter, then, we see the arc, as the index of the state of the system, developed in the usual manner, while that in the former has no such significance.

No. 63, Elizabeth Josephs, a woman of 77, shows, in the right eye, an irregular circle, composed of broken segments, and in the left, an arc, not in its usual place above, but on one side of the cornea. In this case, there has been ophthalmia of both eyes, at intervals, for a long period, though they are at present free from it. Neither of these arcs could be considered as formed in the usual manner, and they are not, therefore, indices of present vice in the system, but only of previous disease in the locality.

Without these or like evidences of local origin, we must consider the premature arc the only outward sign of an inward disease,—a disease slow often in its march, but as fearfully certain as it is slow, and as wearing and exhausting, if not as painful, as certain. I do not wish to be understood as confining its significance, as a sign of internal decay, to the young, but as supposing that in the aged the way has been prepared for this decay, by a diminution of the high pressure force which is brought to bear on all the organs during earlier life, by a decrease in the flow of animal spirits, and in the intense excitability and eagerness for excitation of the nervous system, which are the attributes of youth and early maturity. In being a natural process of decay, it ceases to be, in its results, though it certainly is in its essence, a disease. *Old age*, con-

sidered as a state of the system, *is*, in fact, with very few exceptions, *fatty degeneration*. The terms may be considered almost synonymous. In the *aged* we look for it, and its gradual, imperceptible invasion neither surprises nor alarms us. In the *young*, it is that much-to-be-dreaded, mysterious disease—premature old age; which has been the theme on which the *descriptive* powers of many an author have been exerted, but upon the *pathology* of which but little light has been thrown until recently.

The brisk step losing its elasticity, the bright eye its lustre, the roses fading from the cheeks and the cherry from the lip, the capricious appetite, the loss of mental energy and sprightliness,—days tedious and nights wakeful, timidity in place of courage, and nervous tremors where before was utter ignorance of nerves, the palpitating heart and quickly-spent breath; and all this without lesion, discoverable during life, of any important organ, with, in short, naught to account for it, have been described over and over again, in all the sad and mournfully poetic language that the subject deserves, and called premature old age. And that is exactly what it is. But that is only another way of saying that it is fatty degeneration, the effects of which are first made painfully apparent through the heart, as the most important organ, and that in which the first sign of eccentricity is most quickly felt. But a train of symptoms almost exactly similar to these, may undoubtedly be caused by divers other encroachments on the healthy state. How are we to know whether this melancholy procession be not headed by masturbation, chlorosis, excessive grief, or an obscure neurosis? Formerly it could not be known. Now we have but to examine the cornea, and if we discover the faintest appearance of the pale are dimming its transparency, the matter is at once definitely settled. If we do not discover it, we are still in the same state of uncertainty that enveloped our diagnosis, as a thick mist, before we were possessed of this means of discrimination. We are not sure that the disease in question does not exist; for it may, in rare cases, proceed to some extent without impressing its stamp on the window of the mind. We are simply not sure that it does. The existence of the lesion clinches the argument and determines the diagnosis; its absence leaves us in doubt.

In some of these premature cases, I am able to give the direct and definite testimony of post mortem examination. In others the general health and sounds of the heart are the only indices to which to appeal for information as to the state of that organ. Of the former I have already spoken. It remains then, to inquire what are the physical signs to be appreciated by auscultation, to which this condition of the heart may be expected to give rise. Whatever be the form in which the deposition takes its rise (and Rokitansky recognizes three), the result will still be much the same, viz: diminution of muscular power, consequent on diminution of muscular substance and the interference of deposited matter; and the signs of this diminished power will be nearly identical with those of anæmia. These are generally recorded as an action and impulse, at first perhaps increased, afterwards diminished; rythm variable, generally more frequent; frequently the bellows sound in its various degrees, with great distinctness and sharpness of the sounds. This sharpness will be especially noticeable, if the muscular atrophy be accompanied, as is generally the case, with greater or less dilatation. Rokitansky says "the valves of the heart are at the same time thin and transparent, while the papillary tendons are softened." And again, and the remark has an important bearing on our discussion: "It is worthy of notice that the papillary muscles are sometimes especially and very extensively diseased, as they may give rise to endocarditic murmurs, and insufficiency of the valves, in consequence of inefficient action and tension." In one case which I examined, No. 70, the papillary muscles were almost the sole seat of disease, and a few of them were little else than fat. Another effect of this thinning of the valves and softening of the columnæ is, I think, a slight roughness, caused by the fluctuation of the thin and loose edge of the valve in the current of the blood, somewhat as a loose sail flaps and flutters in a head wind. One or all of these signs may be present in this state of the heart substance, or in the early stages they may none of them be noticeable.

From among the twenty premature cases, four (Nos. 2, 3, 4, and 10,) have been the subjects of post mortem examinations, and it will be seen that in every case the heart has been, more

or less, but decidedly, diseased in this way; though there is but one in which it could be supposed to have had any direct influence in producing death. I allude to No. 4, a young mulatto woman, Ann Scudder, who died in a fit of syncope. In this case, there was an extraordinary deposit of normal fat over the entire body, giving rise to a truly magnificent grace and rotundity of outline. This existence of large quantities of normal fat, in connection with fatty degeneration, is often seen, though rather the exception than the rule, emaciation being its more usual accompaniment. On this point, Dr. T. K. Chambers, author of the *Gulstonian Lectures, on corpulence*,* says, "It still remains to be explained why these two opposite states are so often associated together. It probably depends on some change in the condition of the circulating fluid associated with obesity, which renders the formation of fibrin more difficult, and allows the muscular fibre to undergo an interstitial decomposition into oily matter."

I have examined, this afternoon, the body of a man who died of rapid Phthisis. Before death a small upper arc had been noticed on both corneæ. The lungs were found to be filled with softening tubercles, and contained several vomicæ, but emaciation had made scarce any progress. The fat was somewhat in excess, the muscles full and florid, but the normal fat on the apex and right ventricle of the heart, was in considerable excess, and the muscular wall correspondingly atrophied, while the parietes of the left ventricle were considerably thicker than in health, being concentrically hypertrophied. The liver was quite fatty.

Of the remaining sixteen, we have evidences of disease of the heart, either rational or physical, in twelve, and the physical signs are such as we have just demonstrated are to be expected in fatty disease of that organ, viz: the blowing sound, an undue abruptness and clearness of the sounds, an action generally frequent and irritable, sometimes of increased, much oftener of diminished force, with a certain degree of roughness of one or both sounds.

In one case particularly, to which I have already alluded, No.

* Vide the London Lancet for 1850, Vol. II.

4, there was a very loud sound of the kind which I have called in the table a clack. It consists in a peculiar abruptness and clearness of the sounds, though in some cases, seeming to be separate, distinct, and subsequent to them. In this instance, there was neither obstruction nor insufficiency of the valves, merely thinness, with softening of the columnæ carneæ.

Four cases only remain of our twenty premature examples, and in these we have no symptom pointing to the heart as the seat of disease. Of this number, the first, No. 5, is a young man 32 years of age, of heavy build, great muscular development, and extraordinary vigor of constitution. Referring again to Rokitsansky, we learn, that in the first form of which he speaks, and which appears to be only the earlier stage of his second, "actual fatty degeneration," "the muscular wall of the heart in *young* men of *great muscular* strength, is found to be in a normal condition, but in persons of advanced age and in females, in conformity with the general character of the muscular substance, it is in general relatively thinner, more flaccid, discolored and paler." This heart is probably much in the state as that just mentioned as the subject of autopsic examination, viz: the walls generally thick and of a healthy hue, but with a slight degree of degeneration of the apex and wall of the right ventricle, associated with, though perhaps not the result of, an abnormal amount of vesicular fat on those points. The same remark will apply, though with much less force, to the last of the four, No. 22, a female of unusual natural vigor and energy, and decided corpulence. The disease is present, but so great are the nervous and capillary vitality as to resist its encroachments to any serious extent as yet. Of the remaining two, I can offer no solution; nor indeed is it necessary to the establishment of the proposition that I should.

We have still left by far the larger number of our cases, as among those in whom the arc has appeared, as might be expected, in the later years of life, when disease and degeneration become the rule, perfect health the exception.

These are persons, over fifty-five years of age, or between forty-five and fifty-five, in whom the phenomenon is very slightly perceptible. In these, if the theory hold true, we should find the ravages of time earlier shown, and a more frequent

display of heart symptoms in those in whom the arc has made the greater progress. Of these also, four have been the subject of post mortem examinations, and in every case have verified the prognosis of fatty disease of the heart. They are Nos. 16, 17, 24, and 70.

Now although the relation just mentioned, between the general health and the progress of the corneal degeneration is absent in many of the cases, owing to various idiosyncracies and other circumstances which might be expected to affect it, yet it does exist in a sufficient number to give strong probability to our conclusion, and in some it is sufficiently marked to merit attention; for instance, Nos. 19, 24, 32, 38, 43, and 45. But a more remarkable feature in regard to those in advanced life is, the contrast which they offer to the more youthful cases, as respects the degree in which they have respectively resisted or succumbed to the onset of the disease. While we find in nearly every case of precocious arc, even slightly developed, all the evidences of lost health and early decline, we see, on the other hand, individuals far down in the vale of years, with a broad and distinct line of white, making the entire circuit of the cornea, who are yet enjoying a green old age. Compare, for instance, almost any individual of the twenty who afford examples of its early development, with the twenty last on the list, all of whom are upwards of 70 years of age, and the general good health and elasticity of spirits of the latter, becomes strikingly apparent against the dark background of debility, languor, inanition, and despair, exhibited by a majority of the former. Or to take individual cases, place Nos. 3 and 4, respectively 31 and 32 years of age, in whom was very strikingly exemplified the languor and utter inaptitude for exertion which characterize premature old age, and in one of whom no other probable cause of death could be discovered; place them, I say, side by side with the two whose names close our tables, both of whom have completed their centuries, and in whom we have, at least, the animal functions perfectly performed, and in one, considerable mental activity.

When it is stated that this whole number of seventy-two cases were selected from among certainly not more than one hundred and fifty individuals, while the twenty marked as pre-

cious, were discovered among not more than seventy of a corresponding age, it will be acknowledged at once, I think, that the existence of this lesion is of much more frequent occurrence in the colored race than in the white. As to the cause of this disparity I propose to speak hereafter. What I wish to propose at present, is this : that in a collection of individuals in whom the presence of this phenomenon is so constant, negative cases acquire almost the force and significance of affirmative. That is to say, the coincidence of a remarkable degree of health and strength in the comparatively aged, with the entire absence, or presence in a very slight degree, of this index of decay, is as strong an argument as its existence in an advanced stage in those with whom time has dealt less kindly. Of such cases there are several in the tables. I may call attention to nine of them, Nos. 36, 39, 47, 50, 51, 63, 66, 68, and 70.

No. 63, a woman of seventy-seven years, exhibits comparative vigor, no dyspnoea or palpitation, the heart sounds perfectly normal, and this with the entire absence of any properly marked senile arc. No. 70, on whom an autopsy was performed, is also a striking case. It is thus recorded on my post mortem register : "Gabriel Deogo, aged 80, black, 20 hours after death, decided rigor, brought in comatose: died three days after admission. Heart not auscultated. Very faint upper arcs on both corneæ. Sectio. Thorax, Lungs, both congested. Slight pleuritic adhesions with a little effusion. A single cretified tubercle at lower edge of *right* lung. Heart, eccentric hypertrophy. Calcareous deposit on aortic valves. Dilatation of ascending arch of aorta with atheromatous deposit. No remarkable deposit of fat on the exterior, and but very slight fatty degeneration interiorly. Abdomen, Liver, large, nutmeg, not fatty. Kidneys, slightly cystic, soft, and congested." A certain old Peggy Munson too, has fallen under my notice, whose head the snows of seventy winters have not succeeded in whitening, and who, although somewhat crippled by inflammatory rheumatism, exhibits not the first sign of cardiac difficulty, and enjoys a more than ordinary degree of health, while her cornea is almost free from the stamp of age.

An index to the existence of fatty disease of the heart, has

of course a like bearing with regard to those lesions which are most frequently observed as concomitants of that disease. These may be noticed as dilatation of the heart, atheromatous deposit in the arteries, whether merely of the aorta resulting in dilation of its arch with liability to rupture, or through the entire system, as seen in aneurismal developments, and in rupture of the softened arteries in the brain producing apoplexy, or going on to ossification as perceptible to the touch in the radial artery, or by producing gangrene of the extremities. As regards the first mentioned of these, it is sufficient for me to remark in illustration, after having already adverted to the unusually and disproportionately frequent occurrence of the arc in the colored race, that, to give the lowest estimate, at least one-fourth of the bodies which I have examined, not under twenty years of age, since my residence in this institution, have presented specimens of dilatation of the heart. And my experience in that particular is corroborated by many of my predecessors, and by Dr. Fitch, the resident physician, whose fifteen years' experience with this people certainly entitles him to speak with confidence.

Atheromatous deposit, 1st, in the arch of the aorta, is illustrated in the case just cited of Gabriel Deogo, where there was a decided dilatation, with patches of atheroma thickly strewn along its course, occasionally themselves re-degenerated into bony plates. 2d. Through the entire system, resulting in aneurismal development, as seen in the case of Margaret Simpson, No. 37, where we have one of the most extraordinary collections of aneurismal tumors on record: there being not less than two dozen on the arteries above the heart; many of them of considerable size. 3d. Progressing to ossification as indicated by (a) the feel of the radial, which also is the case in the woman just referred to, and (b) by dry gangrene of the extremities, of which we have an instance in the case of Samuel Stevens, No. 14, who entered the Hospital in an almost semi-gelatinous state, so great was the oedema of the entire system, with dry gangrene of the toes of both feet. By a steady course of treatment his anasarca was entirely reduced, and the abnormal heart sounds much diminished in intensity, showing them to have been partly, at least, the result of want of tonici-

ty. 4th. In rupture of the cerebral arteries exemplified in the case of Eliza Smith, No. 10. This woman, the subject of epileptic seizures and an opium eater, died of apoplexy, four days after the occurrence of the lesion. The arteries of the brain were found to be in so remarkably atheromatous a condition that they were considered worthy of preservation, by a gentleman who has had a large experience in morbid specimens. A large clot was found in the left hemisphere. The paralysis in cases 26, 43, and 49, may perhaps safely be referred to a like cause.

While inquiring the histories of these cases, with a view to the investigation above recorded, my attention was early attracted, as I think any one's must be who glances at the table, by the very frequent existence, in those in whom the arc was found, of irregular, ill-defined muscular pains, such as would generally be put down as chronic rheumatism, yet with some doubt as to whether they are not, in some degree, at least, neuralgic. Every physician must have met with such cases, the pains annoying, difficult of relief, seated generally in the bellies of the muscles, causing more or less stiffness, sometimes tenderness, scarce ever accompanying or consequent on, not often in the subjects of, acute, articular rheumatism. Such pains pass under the common title of rheumatic, and as such, I have entered them in the table; but their occurrence, in so many instances, in conjunction with the fatty arc, and often in a degree of severity proportioned to its extent, has led me to propose the inquiry, whether these vague pains may not be the result of fatty degeneration of the muscles. That this disease may give rise to pain is, I think, a rational idea in itself, and Prof. Rokitan-sky gives it his support as follows: Speaking of that "form of degeneration" which "is characterized by the development of minute particles of free fat between the primitive muscular fibres," he says, "I once met with this disease in the muscles of the calf, in which it had given rise to considerable pain: this fact coincides with the experience of other observers."

I can conceive of no reason why pain should not likewise be produced by that form in which "adipose tissue or fat cysts are formed between the ultimate muscular fibres." In connexion with this subject I may call attention to an article by M. Beau

in the *Presse Medicale Belge*, Jan. 3d, 1856, translated for the AMERICAN MEDICAL MONTHLY, for March of this year, on the "Arthralgia of Phthisical Patients." "Under this term he comprehends settled pains in the limbs of phthisical patients." "These pains," he says, "show a decided preference for the lower limbs." "They are rarely confined to the lower extremity," or "to the thigh, leg, or foot, almost invariably occupying both lower limbs to their entire extent." "It is very difficult to localize these pains; they affect the lower limbs in a mass, without our being able to fix their seat in the nerves, the muscles, or the osseous tissue."

The presence of these pains in many cases of phthisis must have attracted almost universal attention, and the description here given of them, is just such as would best describe those of which I am speaking, save that the confinement to the lower limbs is by no means so invariable as the author insists, though often seen. Now what are some of the facts with regard to fatty degeneration of the muscular tissue, bearing upon this point? 1st. "The muscles most exposed to it are the *voluntary* muscles, especially of the lower limbs.—*Rokitansky*. "It is met with in the substance of the heart and in the fleshy coat of the gall-bladder, but is most common in the muscles of the lower extremities."—*Ibid*. "This fatty metamorphosis does not only occur in the form of the abovementioned transition stage, &c., but likewise, independently of any such connection, and accompanied with general emaciation as the result of tuberculosis and tuberculous phthisis."—*Ibid*. "The fatty transformation of the liver is almost confined to phthisis pulmonalis."—*Dunghison*. "Anomalous pains are apt to occur both in this and the next stage of phthisis, in different parts of the body, which add greatly to the distress."—*Ibid*.

In addition to these facts, all strongly bearing upon the question, it appears to me that an argument is to be founded on the success of the treatment of many cases of chronic rheumatism so called, with iodide of potassium. Of the efficacy of an alkaline course in the reduction of corpulence, we have the very distinct and pointed evidence of Dr. T. K. Chambers, in the

aforementioned Gulstonian Lectures,* in the following language: "But there is one class of medicines so universally applicable to all cases of obesity, that I think a trial of them should never be omitted. The chemical affinity of alkalies for fat, point them out as appropriate alteratives in this complaint, and experience proves that they are suitable to the state of the digestive organs. The most eligible one is liquor potassæ, and it may be administered in much larger quantities than any other." Now if, as is undoubtedly the case, "the chemical affinity of the alkalies for fat" be the secret of their successful operation, why may not the affinity be as successfully exercised on particles of "molecular" fat, distributed in muscular tissue, (fatty degeneration,) as upon particles of "vesicular fat," constituting an abnormal amount of fat in normal positions (corpulence). Without for a moment questioning the value of the iodic element in this preparation, I would suggest that the alkalinity of the potassa, which certainly is not lost in the combination with another element as it would be with a salt, may after all be the chief agent in producing a cure in such cases. The increased efficacy which is imparted to preparations of sarsaparilla, and other vegetable entrophics, by the addition of an alkali, in many cases of broken down constitution, is well known, but has not been, I think, satisfactorily accounted for.

With regard to the greater frequency of this disease in the colored race, which I think must be admitted, aside from the fact that their uniformly dark and brilliant iris, makes doubly noticeable its external evidence, in the shape of the white arc, standing out in bold contrast with its setting of jet, there are several reasons which may be assigned for it. First, it should be considered, I think, in connection with the great prevalence of tuberculosis, whether in the form of phthisis pulmonalis, or of scrofula, among that race. The coincidence of the two diseased states has been already touched upon; and I am not exaggerating when I state that one-third of the entire colored population of this section of country die of phthisis pulmonalis, while many, of course, affected with it, are cut off by other diseases,

*Lancet for 1850, Vol. II, p. 443.

before it has completed its fatal course. It will be noticed that six of the eight on the list, on whom autopsies were held, exhibited tubercular depositions in the lungs. Secondly, constitutional tendency would certainly be strengthened and the fatal result hastened by the course of life pursued by the great majority of them ; their privations, their exposures, their early and unintermitted sexual indulgence, all serve to weaken the vital powers of resistance to disease, and prepare the system to be most easily and readily affected by it. Thirdly, the immoderate use of their most fearful and deadly enemy, alcoholic stimulus, the efficacy of which in producing this disease, is testified to by all writers on the subject. To this we may add, fourthly, the enormous amount of fat consumed by them, generally that of pork. The mother's nipple is taken from the child's mouth, only to have a strip of fat introduced in its place, and the cry of the old man on his death bed is still for fat. Now it is well established that fat is most readily formed in the animal economy from substances themselves fat. Mr. Chambers says* " We are led to conclude : first, that the favorite material which nature employs in the production of fat is oleaginous matter." Witness the stuffing of geese with lard to form the *pates de foies gras*, which so tickle the palate of the epicure, with their melting oleaginosity, and the fattening of stock on the oil cake. Now if normal fat in normal positions is thus formed most easily, why not abnormal fat in abnormal positions? And if the system be in a reduced state of vitality, its absorbents losing their efficiency in removing abnormal depositions, its secernents their skill in the proper selection of materials for proper tissue, what more natural than to suppose that the abnormal constituent most in excess in the blood, shall be the most readily deposited in abnormal situations, the absence of healthy vigorous action in which renders them more open to the reception of abnormal particles.

One fact noticeable in the tables still remains, after brief reference to which, I will trespass on your patience no longer. It will be seen that of the four females who were examined, three exhibited fibrous tumors of the uterus. I advert to this

*London Lancet, 1850, Vol. I, p. 17.

not as wishing to establish the senile arc as a sign of this form of disease also, but as illustrative of the manner in which different processes of degeneration may be going on in the same economy and under the same circumstances, and as showing how the deadly enemies of human life and human health, disease and decay, putting aside private differences and antipathies, often unite to march in solid phalanx on the citadel of their common victim, vitality.

A Eulogy on Amussat. Read before the Academy of Medicine, of Paris, by LARREY. Translated for the MONTHLY from the *Gazette Medicale* by M. DESLANDES.

The Academy of Medicine has just lost one of its oldest, most active, and most eminent members. He, however, had been received in her bosom amongst the youngest. Notwithstanding the obligations of a large practice, he was a regular attendant at your meetings; he had offered to the Academy the first fruits or the results of the greater part of his labors, and those labors bore always on important questions, abounded in fruitful ideas, and contained real discoveries, which I shall not call incontestible, to avoid here all allusion to debates which are far from us, and which, moreover, could not be renewed beyond the grave.

But worthily to appropriate the laborious and tormented life of him whose name, ever dear to science and to humanity, has just been inscribed on the necrology of the Academy, it would require something more than a funeral oration, simple homage of our remembrance and adieux offered to our honorable and regretted colleague.

Amussat (Jean-Zulima), Doctor in Surgery, member of the Imperial Academy of Medicine (section of operative medicine), and of diverse national and foreign learned Societies, Chevalier of the Legion of Honor, was born in Paris, on the 21st of November, 1796, at Saint-Maixent, department of the Deux-Sèvres.

His father is one of those worthy provincial practitioners who know how to honor our profession by their character as

much as by their talents, and who practiced medicine more as a mission of charity than a career of fortune.

Brought up in his family, young Amussat received from his father the elementary notions of the art, and completed them with Mr. Servan, a distinguished Surgeon of his native country. He manifested from the beginning, a decided taste for medical studies, and was pursuing them actively when the conscription came to suspend their course, and perhaps to arrest it entirely. There was only one way for him to conciliate the exigency of recruitment with the continuation of his career: it was to obtain a commission of assistant surgeon in the army. He was admitted in the month of January, 1814, at the age of 17, and left immediately to assist at some of the battles of the campaign of France. Young Amussat showed then, in the midst of the dangers of war, that courage and presence of mind which, later, were to distinguish him in the practice of the most perilous operations in surgery. Thus it was that, during the occupation of Rheims by a corps of the French army, he never left the wounded, heaped together in a church transformed into a hospital, where the crowding together of sick and wounded brought on typhus fever. He was himself threatened with the disease; but he never left his post before he had attended all intrusted to his care. Thus again it was, that, anxious to acquire notions of anatomy at the same time as surgical knowledge, he ventured to use his scalpel on some Russian subjects, but surprised in the midst of his dissections, by a detachment of Cossacks, he escaped their vengeance only through his firm and impassible attitude.

Like many other celebrated surgeons, Amussat made his first attempt at surgical operations on the battle field, where Roux, Lisfranc, Sanson, and others, had preceded him. But soon the campaign was at an end and the army disbanded; the young assistant, liberated from service, repaired to Paris, there to pursue his medical studies. He had but very small resources to live upon, and as he did not wish to remain a burden to his family, he manifested such an ardor for learning, that he attracted the attention of his first masters and gained their favor.

M. Troussel, his guide and his friend, assisted him in finding out the means of taking a part in the anatomical works at the

Salpêtrière. There it was that he met, for the first time, our eminent colleague, Mr. Rostan, who, from that period, never ceased to show him the greatest sympathy.

Amussat, at the end of his first year of study, had so well employed his time, that he was a successful competitor for junior assistant, and appointed at La Charité, where they gave him a lodging.

There, in the corner of an obscure and unhealthy amphitheatre, he spent whole days dissecting. His aptitude for pathological anatomy, attracted the attention of M. L'Herminier, who first attached him to his service and afterwards gave him his affection. Two years after, he was admitted as senior assistant at the Salpêtrière, where he extended and multiplied his anatomical labors. He made the autopsy of the greater part of the subjects left at his disposal. Then it was that, wishing to facilitate researches on epilepsy, and the supposed lesions of the spinal cord, he invented an ingenious instrument, adopted since and used in hospitals, under the name of *rachitome*.

It was at that period also that he began private teaching, to which he remained faithful during the whole of his medical life. His first course of lectures was on anatomy and designed only for some artists; but it showed the importance of that study which has become the object of official teaching at the *Ecole des Beaux Arts*.

Encouraged from that time to go on, he established regular lectures at the Salpêtrière, but after a time the success of his lessons excited the jealousy of certain persons, and he was forced to discontinue.

But if he had lost favor, right was on his side. A place of Assistant to the Prosector of Anatomy became vacant at the Faculty, at the end of December, 1821; it was put to competition, Amussat obtained it, and resumed, doubled, tripled, his teaching, giving lectures on anatomy, surgical pathology, and operative medicine.

Carried away by his zeal beyond his strength, he was anxious of competing for the Prosectorship of the Faculty; but a formidable accident prevented him. An anatomical puncture threatened him with purulent resorption; hardly had he escaped it, than he was attacked with an acute dysentery that

put his life in danger. At last he recovered, but from that time his health was very feeble; successive attacks of disease had shattered his frame, and he had to give up the struggles of competitions. He was, indeed, worthy of a place of Surgeon in one of the Hospitals of the Faculty. However, he was obliged to restrain his surgical ambition, and be satisfied with teaching and private practice.

Henceforth, indefatigable worker, he endeavored by constant labor to acquire, in an official teaching, the authority he wanted.

A notice of his scientific labors is sufficient to show all their value, and a rapid sketch of them in chronological order will be enough to bring them to your remembrance.

In 1822, M. Amussat published an essay on the possibility of passing through the urethra of man a straight catheter.

It is on these new data and their practical consequences in the breaking of calculus, that Amussat rested his claims to the discovery of Lithotrity. The more he tried to vindicate the initiative and intuition of that great discovery, the more opposition he met to the acceptance of pretensions he believed legitimate.

In 1823, his observations on the urethra of man and woman, led him to propose straight instruments in the catheterism, now called rectiline, for the extraction or destruction of foreign bodies in the bladder.

The same year, in a memoir on strictures of the urethra, and forced injections, he made five classes of the organic strictures of the urethra, founded on pathological anatomy.

In 1824, his researches on the biliary apparatus had for their object to demonstrate the mechanism of the reflux of the bile in the gall bladder.

In support of his experiments, Amussat exhibited before the Academy an anatomical preparation, the interest of which, added to that of his communication, obtained for him and his first labors a brilliant testimony of interest and esteem.

In 1825, his researches on the nervous system had for their object to demonstrate the disposition of the origin of the spinal nerves.

He explained in another work the communication of the veins with the lymphatic vessels.

In 1826, he brought before the Academy an essay on the anatomical relations of the epigastric artery in the different species of hernia, to which were added practical considerations on a powerful and graduated mode of taxis, of which all surgeons may make useful applications, but which requires much prudence in its use.

In 1826, he read his thesis before the Faculty of Paris, on the Study of Anatomy. He showed the utility of experiments on animals to learn physiology. This interesting essay is addressed to students, to spare them the difficulties which the author himself had encountered in his studies.

From 1827 to 1828, he was engaged in a series of vivisection experiments on traumatic hæmorrhages and the hæmostatic means now in use.

In 1829, he laid before the Institute an *exposé* of his researches on the torsion of arteries, and sometime after he read before that body a learned memoir on that subject. He had conceived the ingenious idea, in reflecting on the disadvantages of the ligature, and the curious phenomena of lacerated wounds in which hæmorrhage seldom take place.

Let us say, however, that he seems to have exaggerated the advantages of torsion, which will nevertheless remain a useful discovery, as it favors the immediate reunion of wounds, and facilitates the practice of operations performed unexpectedly, in the country or on the battle-field.

In 1832, a synoptic table of lithotritry and hypogastric cystotomy, dates the discovery of lithotritry from 1822, the epoch at which appeared his note on the possibility of using the straight catheter in the catheterism of the urethra.

He resumed and commented on this work, later, in a memorable discussion, at the Academy, on the comparative advantages of lithotomy and lithotritry.

In 1832, he published a table of the urinary concretions in man, classified according to their volume and their form, showing the difficulties met with in the practice of lithotomy and lithotritry.

Finding that, in many cases, lithotritry could not cure the disease, but that it might even complicate the accidents attendant on it, he adopted the high operation of lithotomy, and sim-

plified its consequences. He prevented urinary effusions by means of a curved gum-elastic canula, introduced through the subpubian wound to the bottom of the bladder, and giving free passage to the urine, without it being necessary to leave a catheter in the urethra.

In 1835, the suture of the intestines became for him the object of interesting researches, from the experiments of Travers on the circular constriction of the intestinal canal, to restore to it its natural calibre.

In 1835, also, experimental researches on traumatic hæmorrhages, marked out the distinctive characters of arterial and venous hæmorrhages, by showing the mortal effects of the introduction of air into the veins, and the advantages of the torsion of arteries.

The same year, an operation for artificial anus, successfully performed on a new-born infant, stamped the origin of the more complete labors of Amussat, on this important question.

An operation for artificial vagina, performed also with success, in 1836, furnished him with the materials of a work, read at the Institute, on the defects of conformation of the vagina.

In 1836, another memoir, read at the Institute, on spasm of the urethra, shows that it is not sufficient, alone, to oppose the introduction of a catheter in the bladder.

In 1837, he advantageously applied cauterization to the treatment of some urinary fistulæ.

In 1838, he recommended, highly, the use of platinum needles in the twisted suture, as offering more advantages than the others.

In 1839, in an important memoir on the accidental introduction of air in the veins, he gave a summary of a great number of experiments performed by him on living animals, and all the known or collected cases in man, during the course of certain surgical operations.

The same year, in a memoir entitled an account of Broussais' decease, followed by some practical observations on the obstructions of the rectum, he emitted the idea that the operation for artificial anus, according to Callisen's method is preferable to that of Littré, and in a second memoir he modified, advantageously, this method.

He often regretted not having been able to apply it in the case of the illustrious Physician-in-Chief of the Val-de-Grâce, whom he had been called upon to attend, and whom he had seen, so to speak, die from day to day.

The retroversion of the uterus in the state of pregnancy furnished him, in 1839, with the subject of a memoir, founded on two cases of unhoped-for success, and on the analysis of the known facts of the same kind, gave different results.

In 1840, in a memoir on the pathological anatomy of fibrous tumors of the uterus, he demonstrated the possibility of extirpating those tumors when they are contained between the walls of the organ.

Two cases, the only ones then known to him, in support of the above demonstration, gave rise to several new questions on the mode of extirpation of these tumors by torsion and by parcelling (*morcellement*).

It was also in 1840, that strabismus, and the operation applicable to this deformity, became for M. Amussat and Lucien Boyer the object of numerous researches, and the cause of every kind of tribulation.

Stammering, like strabismus, furnished M. Amussat with numerous opportunities of applying tenotomy in the treatment of this infirmity, but they threw stronger doubts still on the advantages attributed by him to this operation, and drew upon him bitter criticism and violent attacks, which painfully wounded his self-esteem and disturbed his rest.

To make diversion to these troubles, the same year, in a second memoir, read at the Academy, on artificial anus, he related new cases in support of Callisen's method modified, over that of Littre, and in 1842, he read at the Institute a third memoir on the same subject.

In that year, also, under the name of cicatrices d'allongement (long cicatrices), he proposed a simple process to prevent the retraction of the cicatrizing tissue, by vivifying every day the angle or angles of certain tumors.

In 1842, the destruction of internal hæmorrhoids, obtained by him by means of the ligature first, and then by cauterization, became, later, the object of an ingenious operation by the

combination of the ligature and simultaneous cauterization of the hæmorrhoidal tumors.

In a memoir read a short time after, at the Institute, on the mechanism of the course of the bile in the biliary ducts, he developed the idea emitted in 1824, before the Academy.

Lastly, again in 1842, in a memoir on the disposition of bloody tumors, and the effusion of blood which takes place after wounds of vessels, he demonstrated the existence of a duct, or conducting tract, in the middle of those sanguine collections, and the importance of seeking through this tract, the source of the hæmorrhage, or the divided vessels.

Here, gentlemen, ends the enumeration of the works published by our learned colleague. Their importance as well as their multiplicity shall, perhaps, no longer excite either jealousy or contest; for it is in the very originality of his works that we must recognize the true merit of that eminent surgeon. And this merit deserves so much more to be duly appreciated, that M. Amussat derived it neither from the sources of his first education, nor from the advantages of an acquired position, nor even from the chances of a future fame; but it resided within himself, in his innate vocation for surgery, in an inventive sagacity for the progress or perfection of the art.

Yes, gentlemen, let us now proclaim it aloud, now that he is no more, Amussat possessed the surgical genius which guesses, invents, or perfects what he has not created.

The summary of his works shall always put in relief his anatomical researches on the urethra, and the application of rectiline catheterism to the practice of lithotritry; his experimental investigations on the biliary apparatus and the course of the bile, on some points of the nervous system, on the anatomy and reduction of hernia, on the operation for artificial anus in the lumbar region, on the pathological anatomy of strictures of the urethra, on the extirpation of fibrous tumors from the uterus, on the torsion of arteries, on the entrance of air in the veins, on traumatic hæmorrhages, on suture of the intestines, on diseases of the urinary organs, and particularly on vesicular calculus, and urethral fistula.

Of all these works, those to which he attached most importance, as questions of origin or priority for the discovery of

lithotrity, were then his researches on the possibility of catheterizing the urethra with straight catheters. He has, even, published on that subject a summary exposition of historical documents, and a synoptic table, very extensive, where, the part belonging to him in that great question necessarily figures.

The history of the art has registered the chronology of the facts on the important discovery of lithotrity. It is enough.

Let us leave, gentlemen, to every one the merit of his works; let us not depreciate, after his death, as he was depreciated during his life, him who must nevertheless rank amongst the most ingenious and most expert surgeons of his time.

A skilful practitioner, having acquired early the celebrity attached to his name, he deserved so much more credit for having obtained it, that he could not support his experience or his authority on the title of professor at the Faculty, nor that of surgeon of a hospital, since he belonged neither to official teaching or hospital service.

As an operator Amussat was a great artist, passionately fond of his profession. He was possessed of that taste and tact which, in surgery, are the *coup d'œil* of skill. He united prudence to firmness, did not shrink from a difficult undertaking, but did not try to show off his talents, or to increase his reputation at the risk and peril of those who entrusted themselves to his care. He knew how to speak to them the sweet language of persuasion, to inspire them with resignation to the gravest and most formidable operations; and, better still, he knew how to spare them sufferings whenever the resources of art allowed him to fill the most salutary of all indications, that which so well attests the resources of nature, that which every surgeon should endeavor to attain by dint of care, patience, abnegation, and hope,—that indication which has deserved the so legitimate name of conservative surgery.

But if it was necessary to operate, his firm and skillful hand used, with as much security as success, all the instruments of his arsenal.

Several, invented or perfected by him, testify to the inventiveness of his surgical spirit. It is particularly in reference to the urinary organs, that we must mention the straight catheter, the *urethrotome*, the caustic-case, and the lithotritors, and many

other instruments, such as torsion pincers, pessaries, &c., which all bear the stamp of an ingenious idea, or of practical utility.

As a *savant*, M. Amussat had no pretension to erudition, but he was endowed with a rare patience and will, for the research or study of a subject. Persevering, obstinate in working, he followed an idea until he had arrived at experimental demonstration, without, perhaps, caring enough for the work already undertaken, with views analagous to his own.

The very originality of his works brought him just rewards. Thus, as laureate of the Institute, he carried several memorable prizes :

One of 2,000 francs for Lithotrity.

“ “ 6,000 “ for the Torsion of Arteries.

“ “ 4,000 “ for the Introduction of Air in the Veins.

“ “ 3,000 “ for Lumbar Enterotomy.

Placed several times on the list of the candidates for the Chair of Surgery, at the Academy of Sciences, if he had not the honor of being selected, he had the satisfaction of having been judged worthy of it.

As a member of the Academy of Medicine, he received from her the noblest encouragements, the greatest reward of his first efforts, of his first labors, since he was admitted, and almost received with acclamations, in the number of her titular members, before he had even obtained the diploma of Doctor.

But he never forgot the gratitude that was imposed upon him by that exceptional favor. He faithfully offered to the Academy the premises of his other works, of his new researches, and of his last operations, reading several memoirs, giving important communications, and making diverse presentations. Lastly he shed lustre on some of these memorable discussions.

As a professor, M. Amussat exercised himself in the art of teaching when he was yet only a student ; and later, he gave lectures on anatomy, physiology, surgical anatomy, operations, and bandages, and experimental surgery, which were well attended.

He attached to the teaching of this last branch so just an importance, that he thought of making it the subject of a special work. He only sketched it, and furnished the elements of

it in his thesis, in his researches on traumatic hæmorrhages, and in his work on the introduction of air in the veins.

He had instituted at his own house surgical conferences in which he expounded his works and the results of his observations, to French or foreign practitioners invited at these weekly reunions. It is because I was present at several of them, that I am able, like many others, to appreciate all their interest.

In 1830, he gave a course of lectures on military surgery, for which he had asked of me some documents, with the idea of being useful to some of the young surgeons which were going to join the army in Africa.

As a man, Amussat was good and obliging to all, full of gentleness in his intercourse with his fellow-men, affectionate towards his pupils, benevolent to his *confrères*, even to those who did not like him or were jealous of his merits. He attached himself to his patients, and if he required much from the rich, he gave a great deal to the poor. He had at the beginning of his career, experienced embarrassment, privations, and having attained a fortune, well acquired by constant labor, he was generous and charitable, without ostentation.

Allow me to recall a well known fact, or rather a forgotten one, before bidding a last adieu to our excellent and so to be regretted friend.

In 1831, the widow of a most honorable physician, found herself reduced to indigence; she hardly dared implore the compassion of her husband's professional brethren; she addressed herself to M. Amussat, who first saved her from misery, and immediately conceived or accepted from an honorable *confrère* the idea of founding a mutual assistance association amongst physicians. He had a meeting with some of these, and his project was adopted without opposition. Statutes definitively constituted the association, which took the name of *Société de prévoyance*. It lasted two years, and the good it was able to accomplish in so short a time, shows what could be expected from an institution established on a more extensive scale and officially authorized. The illustrious Dean of the Faculty accomplished this work, which he so well directed during the rest of his life; but let us not forget, gentlemen, that the foun-

dation of Orfila, is a work inspired by the happy initiative of Amussat.

As a friend, as a relation, Amussat was full of the tenderest feelings and devotion for his own family. He was first the support of his mother and his three sisters, which he treated as his own children, and whom he brought up and married. A model of filial tenderness and piety, he supported also his venerable father, now 90 years old, and destined to survive him if he is not dead on hearing the fatal news.

He leaves behind him a much sorrowing son, already known in surgery by useful publications. He will also be deeply regretted by his brother of adoption, who long had a share in his labors, his affections, and his griefs.

Oh, that he had long ago listened to the prayers of his pupils and of his friends, and taken the rest he needed.

M. Amussat died at the age of 50, on the 13th of May, in the night, after a few days' illness only, and almost without any other suffering than a gradual giving way of all his strength. Symptoms of diphtheria and vesical paralysis showed themselves, it is true, in the last moments; but definitively he fell under the constant fatigues of that hard profession which kills so many physicians, exhausted in trying to make their patients live. He died as he had lived, full of courage and resignation.

Farewell, then, dear and excellent colleague. I wish a more authorized or more intimate voice than mine, had traced all the labors of your life, and expressed all the regrets that shall follow you to the grave, and offered to your memory a homage so well merited.

May I, at least, have been the interpreter of the Academy in this last adieu.

On the Impurities of Water and their Effects. By Dr. A. G. LAWTON, of Lasalle, Ill.

Whatever may be the remote or the essential cause of epidemics, and especially of cholera, there is one thing tolerably certain, and that is, that the atmosphere and water are the grand mediums, through and by the agency of which, it is

brought to bear on, and against, the powers of life on the human constitution.

Water is capable of holding in solution eighty per cent. of vegetable and foreign matter. How much foreign matter the air is capable of retaining is uncertain, but the amount of foreign matter it is capable of holding in a gaseous form is no doubt very great under certain circumstances.

All the vicissitudes, changes, and variations which take place in the air, are instantly followed by corresponding changes in the water. These two elements are very much alike as to the part they play in the rise, progress, and decline of animal as well as vegetable life. Therefore, the study of the one is necessarily blended with a knowledge of the other.

The capacity of water to retain foreign matter in solution, depends very much on the hygrometric state and temperature of the air. In 1849, when the cholera first became epidemic in the southwestern United States, there were various conjectures as to its direct or approximate cause. Some supposing it to be induced by using lime water, others by animalculæ in the air, and others by poison emanating from the ground, &c., &c. The following facts may lead to something of value, or may throw some light on the subject.

The water of springs, wells, and streams, indicated an extreme variableness as to purity, from the beginning of the epidemic to its close. Water is, like the atmosphere, subject to changes, and agrees with the state and condition of the air, both as regards its purity and its capacity to hold foreign matter in solution. When the weather is hot and dry the vegetable impurities in water are thrown both up and down, but mostly down; and on the approach of rainy weather, clouds and storms, the impurities rise from the bottom of ponds, wells, and springs, being re-absorbed, and the water again becomes capable of retaining an increased amount of impurities in solution. Hence, a stagnant pool of water becomes a perfect barometer, by which we can predict an approaching storm, and also when rain and storms are about to cease, with perfect certainty, some days beforehand. Thus we shall find that a cloudy sky is always preceded by a cloudy state of the water; and the disappearance of this clouded state of the water is a sure

forerunner of clear weather. These changes are more decidedly conspicuous in stagnant pools of water, where the water lies in contact with decayed vegetable matter. In long-continued dry, hot weather, the water becomes perfectly clear, and when rain and cloudy weather are about to return the water assumes an opaque appearance, produced by the rising of the impurities from the bottom. In long-continued dry, hot weather, the water in stagnant pools may become perfectly pure, so that it may be drank with perfect impunity for any length of time; but as soon as rain sets in, or the weather becomes cloudy, the water will, whenever the circumstances are favorable, become poisonous and unhealthy. And this is the case to a greater or less extent in wells, springs, and streams, or whenever there is vegetable matter in contact with the water, for it to act upon. This is the reason why epidemic diarrhœas and dysenteries always prevail most in wet and rainy seasons,—because in wet weather the water is poison, which poison takes effect on the stomach and bowels.

While I lived in Saline Co., Mo., in 1845, in order to test some points concerning the purity of water under different circumstances, I drank water from a stagnant pool six weeks, it being in very dry, hot weather. The water was clear and sweet, the taste was good, and it agreed well until the 38th day, during which time my health never was better. On the 38th day I noticed a slight dimness of the water, and something disagreeable in the taste; on the 39th, still more so; on the 40th day, the water showed some signs of being a little riled, and quite disagreeable in taste; on the 41st day, when I drank of the water it sickened me, as though I had taken a very little ipecac, and on this day the first signs of rain appeared in the sky; and on the 42d day the rain commenced, at which time, when I drank of the water, it came near vomiting me for some little time, and about 10 o'clock I had something like a chill, which lasted about two hours and passed off without fever. On the 43d day the rain continued, and the water sickened me more than ever; about 10 o'clock I had a more decided chill, which lasted about two hours, at the end of which time a severe diarrhœa set in, with more decided signs of vomiting, at which time I became alarmed and stopped

drinking of the water, and began to take medicine to counteract and to drive away the poisonous effects of the water, which it required three or four days to accomplish. I had fever on the two days after the second chill.

The experiment was satisfactory to me, however, and fully convinced me that all the poisonous matter which the water may have contained was on the bottom of the pond, until the air showed signs of an approaching storm and cloudy weather, which was four days from the time the water showed the first signs of an unsettled state till rain began to fall. One of these pools had a wet weather spring which run into it, out of which a family had used and drank water for ten years, and they had been generally healthy. Some logs being accidentally hauled through the pond riled the mud deep from the bottom, which had a very rank and offensive odor; yet the family continued to drink and use the water, and on the third day two of them took the fever, and on the fifth day after using this rily water there was not a well person in the house but a small child, and one of them died,—the fever being of a malignant grade, resembling some grades of typhus.

I have no doubt but that this fever was produced by drinking and using this water, it being loaded with poison from the bottom of this pond, which may have been accumulating there for years; for the pool had no outlet for most of the year.

In the fall of 1846, in the town of Marshall, Saline Co., Mo., the same thing occurred, only on a larger scale. They were in the habit of hauling water to drink and use in town, from one of these stagnant pools. While Court was in session, they hauled more than usual,—so much so that the water became very much stirred up from the bottom of the pool.

Towards night this water was drank very freely about town, especially just before and after supper. Soon after supper, the people began to fall sick with excessive vomiting and purging, and in a few hours there were found to be about seventy persons on the sick list, besides many who were affected in a less degree,—it being nearly all who had drank of this kind of water. In these cases, the water being highly charged with deleterious matter, it took effect suddenly, like an overdose of corrosive poison; and so sudden and alarming were the attacks

that the patients actually believed, at the time, that there had been arsenic put in the water by some unknown person. Although medical aid was at hand, yet many of the patients had fever on the next day, which continued on some for a week or ten days, and some of them remained pale and feeble for many weeks. The time which elapsed from the time the poison-water was drank till fever set in, was 24 to 48 hours, according to my notes, made a few days after the time.

In these cases, had the water been less highly charged with poison, and the effects less sudden, and had sickness followed at some later date, the water would never have been suspected of being the primary cause.

There are many springs that contain so little of this poison, that it is often used for a long time with impunity, yet all at once the water becomes highly charged with poison from some peculiar change in the weather or season, and sickness follows; but they know not from whence it springs. There are many springs in the southwest, the water from which, while the weather is cloudy and rainy, always sickens me when I drink of it, and sometimes it will produce vomiting; yet, while the weather is clear and dry, it has all the taste and appearance of good, and passes for such by those who use it. This kind of water is to be found, more or less, throughout the southwestern country, and especially on the lowlands and fertile prairies. The water is affected by the hygrometric state and temperature of the air, and very likely by the electric condition also, and by passing through a very rich soil, with an overgrowth of vegetation, constantly in a state of decay, it absorbs and carries with it more or less of decomposing vegetable matter, whenever the circumstances of the weather are favorable for it to do so. More especially was this the case in the late epidemic cholera.

As early as May, 1849, I accidentally discovered that there was an unusual amount of impurities in the water of wells, springs, and the streams in Missouri and along the Mississippi river; but I thought but little of it until I came to Lasalle. On arriving at Lasalle, I was very much surprised to find an ounce vial nearly half filled with a cotton-like, flocculent substance, after putting into it five grains of lunar caustic. The

most of this, as near as I could judge without a chemical test, was vegetable. The water here continued to show an unusual amount of this impurity until the cholera subsided, after which the water in Lasalle was found to contain nothing but a little lime and gypsum.

In all the districts which I visited in Mississippi, in '49, while the cholera prevailed to a great extent, the water contained an unusual amount of impurities. But not knowing how much of these impurities it contained in its normal state, these experiments are of no valid use. Precisely so is it with many parts of Missouri, Illinois, and New York, hence I shall only speak of it in Lasalle and its surrounding country.

The water of wells, springs, and streams, in Lasalle and its surrounding country, showed an increased amount of vegetable impurity, beginning about fourteen days or less, before each annual visitation of the epidemic.

I noticed that whenever the waters had acquired and held in solution a certain amount of foreign matter, diarrhœas and bowel affections set in, and whenever the water had attained to a still higher grade of impurity the cholera made its appearance; and furthermore, that the grade and intensity of the disease ranged in accordance with the amount of impurity found in the water, and whenever the water dropped this impurity suddenly, the cholera subsided equally as suddenly. So that if this phenomenon shall prove true, and continue to hold good in future with other epidemics of the same class, and under the same circumstances, as it has in this past epidemic cholera, then it will give us a sure and certain rule by which we can judge or tell beforehand when we may expect a visitation of an epidemic of this peculiar class, and also when it is about to subside. I think it will hold true, for in 1855, in May, the impurities in water began to accumulate, and continued to increase for a week, at which time lunar caustic threw down nearly as much impurity as it had at any former visitation of the disease, immediately after which the cholera was reported along the Mississippi river, at St. Louis, Rock Island, and some other places in an endemic form. Bowel affections were common here, and some deaths; and four or five cases resembling cholera occurred here, being brought from the South, of which

four died suddenly. At this time the impurities in the water began rapidly to disappear, and in three days they were all gone ; after which there was nothing found in the water but a very little lime and gypsum,—impurities common in all hard water, and especially here at Lasalle. After this there were no more signs of cholera in all this country, nor has there been up to this time, nor anything very closely allied to it.

I have kept a record of the weather for twenty years, during which time I have been a close observer of the various kinds and quality of water, for my own amusement ; and it is only within the last ten years that I have thought of turning these observations to any useful account. But now it is my opinion that if these observations are followed up, as they ought to be, by medical men, the result will be the discovery of some important valuable truths.

The most important circumstance concerning the self-purification of water, occurred in the water of the Illinois river, on the 4th, 5th, and 6th days of July, 1851. The wind had blown from an easterly direction for a long time ; thermometer ranging from 60° to 86°; the cholera being decidedly epidemic at the time, though a little on the decline. At midnight the wind changed to the southwest. At 4 o'clock in the morning, the ferryman, in attempting to cross the Illinois river, found the rope so completely loaded with slime that it took him a long time to clear it so he could cross. At 11 o'clock he informed me that he had then crossed four times, and found the rope loaded with slime every time, to the amount, sometimes, of eight or nine hundred pounds.

On examining the water I found it very much clouded, and appeared to be undergoing a process of self-purification. There was constantly forming in it masses of various colored slime, which collected in strings and bunches, like the slime which sometimes collects on springs of water. It seemed to fall down in the water like snow ; it was white, green, gray, and yellow, and as it lodged on the rope of the ferry, it hung over the rope two and three feet long. The water had a turbid appearance, as though some reagent had been thrown into it, being dark and clouded.

This process continued three days, at the end of which time

the water began to assume its native transparency, soon after which it became perfectly clear, and much more transparent than before. One thing worthy of note is, that the cholera continued up to this time, when it disappeared suddenly, and returned no more that year in the town of Lasalle.

It is an universally admitted fact in the southwest, that river water is more healthy to drink than water from wells or springs, and the reason is obvious; the river water, by being exposed to air and solar heat, undergoes a process of purification as above stated. Yet I must confess that this phenomenon, above spoken of, was on a larger and a more magnificent scale than I ever saw before. Because, I suppose, the water held at this time a far greater amount of impurities in solution. This, I think, shows very plainly that this tendency of water to take up and retain in solution an increased amount of foreign matter is in some way connected or concerned in the propagation of epidemics under certain circumstances, and especially diarrhœas and cholera.

Long continued dry, hot weather will put a stop to cholera with nearly as much certainty as heavy rains will put a stop to epidemic fevers at the end of a dry, hot Summer. These two diseases are engendered by the two extremes, although they are both produced by the same invisible poison, or, as some say, state of the air; yet they are brought in contact with human life under different circumstances, hence the effect is made manifest to us in a different form. In one case we get the effect of the poison by the water, which has its effect on the stomach and bowels; in the other case we get it from the air, which takes effect by or through the lungs and skin. Hence the result of the former will be diarrhœas and the like, while the latter will result in a class of diseases denominated fever,—each one being governed by its own peculiar hygrometric state and temperature of the air, and other circumstances. It is very likely that electricity is in some way concerned, or governs in some degree the purity or impurity of water and the air; but how, or in what way, we do not as yet understand.

Spring and well water always contain more or less foreign matter, or impurities, and the healthfulness of the water depends upon what this impurity consists of, and the quantity it

may contain. These impurities generally partake measurably of the soil, vegetation, and the under strata of the ground through which the water flows. Many cold springs are transparent when the water first runs out of the ground, but as soon as it is exposed to warm sunshine it assumes a turbid appearance, or a darker hue, and sometimes it becomes quite milky in appearance. When this is the case the water contains a large quantity of vegetable impurities, and oftentimes of a poisonous character.

A good way to test this kind of water, or any cold water, when there are no other means at hand, is to dip up a glass or pitcher full and let it stand during hot weather. If the water is bad, it will show an increased opacity, and a more disagreeable taste, and after it has stood a few days a greasy-looking scum will be found on the top, and slimy sediment on the bottom, at which time the water becomes again clear as at first, and sometimes more so; and this result will be in proportion to the vegetable impurities contained in the water.

All water has a tendency of itself to throw up and down all foreign vegetable matter after being brought together in large bodies, whenever the hygrometric state and temperature of the air is favorable for it to do so.

As a general thing this process of self-purification of water is constantly going on in water as fast as it becomes exposed to the air in warm weather. Hence some very impure water may pass for good water, because the most of the impurities fall to the bottom, or float off in scum, while the water is standing in the spring or well before being taken out.

But it seems that under certain circumstances the laws of self-purification of water cease, or are suspended, as was the case in the late epidemic cholera, and the water retains its impurities, and also acquires an increased power to absorb and retain in solution an increased amount of foreign matter. For the water in all the cholera districts showed an increased amount of impurities as the cholera advanced, and whenever this impurity in the water disappeared, the cholera also vanished at the same time, or soon after.

In 1849, while the cholera was worst in Lasalle, the fish died in great numbers along the Illinois river, and the same thing

was noticed in some other streams, which shows plainly that the waters of cholera districts at that time contained something unusually unhealthy and poisonous, and that it was in some way connected with the epidemic then common in our country.

And many people who eat of fish taken from these waters at this time, took the cholera soon after and died, of which I could give some decided cases if space would permit.

LASALLE, July 28, 1856.

REVIEWS AND BIBLIOGRAPHY.

"Nullius addictus jurare in verba magistri."

Physical Exploration and Diagnosis of Diseases affecting the Respiratory Organs. By AUSTIN FLINT, M.D., &c. Philadelphia: Blanchard & Lea. 1856.

"Whoever undertakes to write a didactic treatise, in effect, assumes that he is competent to the task." So writes the author in the preface of the work, whose title we have placed at the head of this article. A competency for such a task necessitates clinical experience, rigid analytical power, and a habit of observation which can only be obtained at the bedside. We are prepared to grant this combination of faculties to Dr. Flint, for his previous labors give evidence of the close examination to which he subjects the large number of clinical cases which have fallen under his charge, and show that he possesses that precision and exactitude of analysis which is requisite for such an undertaking.

At this day, no one who is at all familiar with the subject of physical exploration, doubts the precious aid which auscultation and percussion furnishes to diagnosis. Coming as it were, almost complete from the hands of its discoverer, auscultation of the respiratory organs has until lately received but few modifications or few additions to the rationale of the signs as originally developed by Lænnec. Recently, however, from the school of Vienna, new views have been promulgated, which have thrown some discord into the minds of students, and gaining credence, have caused the views of Lænnec to be subjected

to a new scrutiny, and have instigated new experiments and new analyses.

The volume before us is partly the result of this spirit of criticism and progression upon the part of Dr. Flint, and although in addition to the experience of the author, we find a most admirable *resumé* of the opinions and theories of all the principal writers upon the subject, yet we discover no blind adhesion to theories because they are old, or have the stamp of a celebrated teacher; nor yet a skeptical mention of a novel idea, because it is novel, but all questions are stated fairly and examined dispassionately.

The introductory chapters of this work are devoted to the Anatomy and Physiology of the Respiratory Apparatus, and to the Topography of the chest. In this latter respect, the usual divisions have been adopted following Walshe and other writers prior to him.

The principal portion of the volume is divided into two parts. The first treats of the physical exploration of the chest; the second is devoted to the diagnosis of diseases affecting the respiratory organs.

In the first part the various methods of physical exploration are successively examined, and it is in the general remarks attached to this part, that we meet a bold refutation of the depreciatory arguments of those, who, not able to discern the delicate teachings of this means of diagnosis, condemn it entirely; or, if possessed of that cultivation of ear, consider the signs furnished by physical exploration as representing definite conditions, requiring no further effort of mind than the mere appreciation of the sounds. Hence many errors arise and much mistrust is begotten. To such, our author says: "According to this view, physical exploration is merely a mechanical art. This is implied when *symptoms* as distinguished from *signs* are called *rational*. The inference is that to determine the value of signs, processes of reasoning are not required; that they express in themselves their full import, and that the ability to discriminate different diseases thereby depends mainly on manual tact and the cultivation of the senses. The student should as soon as possible, dispossess the mind of this error. Few signs, individually, are pathognomonic. Their diagnostic signifi-

cation depends on their combinatin with other signs, and on their connection with symptoms. Hence, something more than delicacy of hearing and skilful manipulation, is requisite. Thought and the exercise of judgment are needed, not less in determining the nature and seat of diseases by their *vital* phenomena. In short, physical exploration develops a series of facts which are to be made the subjects of ratiocination in their applications to diagnosis, as much as facts obtained by other methods."

Doubtless much depends upon skilful manipulation, for no one, who has witnessed the manner in which Piorry makes his pleximeter reveal sounds which are impossible to others, can hesitate to award to him great manual dexterity; but this alone does not constitute the worth of the great diagnostician. The senses are intensely cultivated, so that a greater number of signs are furnished by them, for the higher faculties of the mind to arrange and convert into a series of reasonings which lead to a correct diagnosis.

Dr. Flint in pursuing the subject, investigates the sounds elicited by the percussion of a healthy chest, and in this way prepares the student for the study of sounds found in disease. Each region of the chest is separately considered and the healthy sounds described as regards their vesicular quality, pitch, duration, and degree of intensity. The two sides of the chest are compared, and as they are usually considered symmetrical, any deviation from this equality is attempted to be shown. There are some anatomical differences of the two sides pointed out, and the sounds which necessarily result are given.

Heretofore, any deviation of sound upon one side from that of the other, when compared together, they being regarded practically as symmetrical, has been considered an evidence of disease. Our author has found among twenty healthy chests examined for this purpose, twelve cases showing a disparity of sonorousness in the infra-clavicular region, which is the region most frequently examined, especially in cases of incipient tuberculosis or of suspected phthisis. The results of his examinations are thus summed up by him: "It thus appears that in the majority of persons in health, having well formed chests, there is not an absolute equality in the resonance existing at the

summit of the chest in front on the two sides. It appears that as a general rule the disparity consists, in a greater degree of resonance, more vesicular quality, and relative lowness of pitch on the left side." "Theoretically, in view of the greater capacity of the right chest, it would seem perhaps more reasonable that the difference between the two sides should be the reverse of that which is found to exist. The larger development of the right pectoral muscle, in consequence of the greater use of the right upper extremity, may account for the fact in some instances, but the disparity exists in cases in which there is no apparent difference in the muscular covering in this situation. Possibly the different physical conditions at the base of the thorax may afford an explanation. On the right side the lungs repose, with the diaphragm intervening, on the liver, which occupies the whole of the base on that side. The presence of this solid viscus may slightly deaden the sound. On the left side below the lung is situated the stomach, frequently more or less distended with gas, and the effects of this, it may be supposed, is to increase the sonorousness on that side, even at the summit, independent of the transmission of the tympanitic gastric sound which is sometimes observed."

These views are so dependent upon observation, that we can only offer as our hope that the analysis of a greater number of cases may be added to give them still stronger confirmation. Results such as these, so different from the general received opinion, require a greater number of cases and a greater proportion than twelve out of twenty. It shows however, how requisite it is, to enter the field of observation without the bias of a preconceived theory. The explanation does not altogether suffice, but it matters little if such are really the facts. These are important, as this region is the one most frequently examined, and such an existence of sounds materially alters the appreciation of the signs in cases of suspected phthisis. We shall look for a confirmation of these views by a strong array of facts.

In the scapular region, corresponding behind to the infra-clavicular region in front, there is not as great a disparity in sound between the two sides, yet when it does exist, "the general rule is the same, viz: less sonorousness and a higher pitch on the right side."

The "line of hepatic flatness," varying with inspiration and expiration, and thereby showing the breathing capacity of the individual, is dwelt upon under the heads of the mammary and infra-mammary regions. This line is the lower boundary of the lung, and is an important point in examining the right side. The observations upon this point are very interesting, and the results of the author's many observations, are very instructive.

Upon the question whether each organ has an especial sound, as is asserted by Piorry, and denied by Skoda and Walshe, Dr. Flint thus remarks: "The question may be settled by the result of examinations practised on living and dead subjects. Facts thus obtained undoubtedly establish the existence of distinctive sounds, by which the sites of the different organs may be determined, and their boundary lines often mapped out. For example, the sound produced by percussing over the liver, differs obviously from that elicited over the heart: the latter is less flat and higher in pitch. It is highly probable that this difference is due to the disparity in size of the two organs, and the parts in juxtaposition rather than to intrinsic peculiarities of the organ alone." We can hardly tell which view Dr. Flint receives, as he admits the difference in sound, and yet does not altogether believe that it is owing to the organ itself. We should be glad to have something more positive from one who has investigated the subject so industriously.

If a healthy chest be percussed it will give to the finger an impression of elasticity, of resiliency, of a rebounding which cannot be described, but which, once felt, will always be remembered. To draw a comparison, it is only necessary to percuss the healthy chest under the clavicle, and then over the region of the liver. The difference in the tactile impression will be immediately perceived; the one will give the true elasticity of the chest, the other will offer a certain degree of resistance. This method of exploration under the term of *sense of resistance*, is dismissed by Dr. Flint in a very few words. We are the more surprised at this, because in early tuberculous disease, we consider it as a very important sign, which confirms or corrects the other evidences revealed by percussion, and which, added to auscultatory signs, increases the value of physical exploration. This sense of resistance is sometimes the first sign

which attracts the attention, before any marked percussion-sounds are observed. Walshe attaches great value to its revealings. "There are cases," he says "of not very rare occurrence, in which erroneous inferences would almost inevitably be drawn from the sound elicited by percussion, were these not corrected by the information derived from the degree of resistance felt by the fingers." The different degrees of resistance perceived by the fingers upon percussion, were first pointed out by Piorry, who places much reliance upon it as a diagnostic sign, and in our own hands it has always been regarded as a very important indication, deserving of more attention than is usually given to it.

Having studied the sounds produced by percussion in the several regions of the healthy chest, the author develops the subject in reference to morbid signs, furnished by percussion in disease. These sounds are studied in their deviation from the normal standard as regards intensity, quality, pitch, and duration. The author's division does not materially differ from that proposed by Walshe and others being the same thing under a different word-rendering, with a slight modification or adaptation of some views from Skoda. There is in this section, a happy blending of the views of these authors where they do not diametrically oppose each other, and an attempt is made to simplify the nomenclature which is greatly to be desired. Difficulty is always experienced by writers to express by a single word all that is desirable, and hence all nomenclatures are faulty and open to criticism, yet it would be difficult to find one more simple and less faulty than that adopted by Dr. Flint, which is as follows:—1. *Exaggerated vesicular resonance*; 2. *Diminished resonance or dullness*; 3. *Absence of resonance or flatness*; 4. *Tympanitic resonance*. The first three are not practically different from the first three of Walshe, but we decidedly prefer the terms used by Dr. Flint, as being terse, simple, and more readily appreciated by the student. Vesicular resonance being considered as the true pulmonary percussion sound, these divisions include all the varieties of sound which preserve this pulmonary quality down to absence of vesicular resonance, while all other sounds which do not have reference to the vesicular resonance, are included under one general head, that of *tympanitic reso-*

nance. These being alterations in quality are non-vesicular. Other writers have made many sub-divisions of this class, but Dr. Flint, with a practical consideration, adopts but two: *amphoric resonance*, and the *cracked-metal sound*.

Under each of these divisions the author points out the principal diseases in which the percussion-sound is found, and gives its diagnostic value. When upon the subject of tympanitic resonance, the fact of a diminution of sonorousness occurring in some cases of emphysema with great tension, is adverted to, and the theory of Skoda, who first pointed out this fact, is criticized. Skoda calls this a non-tympanitic sound. "But," says Dr. Flint, "by this expression is meant simply that the loudness and clearness are diminished. Using the term tympanitic as applied to an altered quality of sound, the statement of Skoda is incorrect, inasmuch as with the diminution of sonorousness under these circumstances, the vesicular quality is not increased." This simply as a criticism upon a term, seems just, for the word non-tympanitic does not suggest anything by itself. Another process of thought is necessary in which the character of the tympanitic sounds must be first considered, before an idea can be had of a non-tympanitic sound, and then this sound has no special signification, except in contra-distinction to the tympanitic.

Dr. Flint, in closing the chapter on percussion, gives a summary of the principal points developed in its pages.

The same plan pursued in relation to percussion, is adopted in the chapter on auscultation. The means employed, and the manner of employing them, in the study of auscultation, are first presented, and then the author passes on to the subject of auscultation in health. The physiological phenomena incident to the respiration, to the voice, and to the act of coughing, are separately examined. The respiration is studied in both acts of inspiration and expiration, in the several anatomical regions of the trachea, the larger bronchi, the smaller bronchi, and vesicles,—and the phenomena of each act of respiration in each of these regions, separately analyzed, and contrasted with each other. The phenomena noted in forty-four healthy persons, in the region of the trachea, are given as follows: "A sound of inspiration and expiration; both having a tubular quality;

both higher in pitch than the vesicular respiration ; a short interval separating the two sounds ; the expiratory sound more intense, longer, and higher in pitch, than the inspiratory." Dr. Flint does not find any notable difference between laryngeal and tracheal respiration, except in intensity, and when this existed it was found less intense over the larynx than over the trachea.

The sound which is produced by respiration in the bronchial tubes, previous to their entering the lungs on either side, is called the bronchial respiratory sound. It is tubular in quality,—differing in this respect from tracheal respiration only in degree of intensity,—and is, in addition, modified by the vesicular respiration. The result of Dr. Flint's examination of forty-seven cases is, that, "of a given number of individuals, in one-half we may expect to hear an inspiratory and expiratory sound in front, and in two-thirds behind. When a sound with both respiratory acts is found on one side, and not on the other, it is invariably on the right side. When there is a difference of intensity in the respiratory sound between the two sides, the greater degree of intensity is found sometimes on the right, and sometimes on the left side, the proportion of instances being not far from equal. The pitch of the inspiratory sound is generally greater on the right side and almost never on the left. In some instances, also, the inspiratory sound is more tubular in character on the right than on the left side. The reverse of this is not observed. The expiratory sound is sometimes more intense than the inspiratory. When this is more marked upon one side than on the other, it is on the right side. The same remarks will apply to prolonged expiration. The pitch of the expiratory, as compared with the inspiratory sound, is higher. To this rule there are occasional exceptions, occurring only upon the left side. A striking contrast between the two sounds in pitch is characteristic of the bronchial respiration of the right side. When the sounds are heard with the two respiratory acts, a brief interval occurs between them."

The last division of respiratory sounds, the vesicular respiration, is also considered as a mixed sound formed in the cells, and in a measure in the bronchial tubes, and also affected by the sounds transmitted from the trachea. It is not tubular in

quality, but has a *soft, breezy* character, which distinguishes it. This quality of vesicular respiration belongs to the inspiratory, and not to the expiratory sound. Dr. Flint carefully examines the sounds indicated as vesicular, and compares them with the phenomena of tracheal and bronchial respiration. Their distinctive characteristics are arranged in tabular form, and contrasted with each other. In analyzing the two acts of respiration, in vesicular respiration our author investigates them in the several regions of the chest, as indicated under the head of percussion, and comparison between the two sides of the chest is instituted, and the differences noted. The results obtained by Dr. Flint from the numerous examinations he has made, are so different from the experiences of other writers, that they merit especial attention. We cannot doubt the fidelity of observation of Dr. Flint, nor can we prejudge the manner in which the observations have been made, yet we cannot assimilate the wide discrepancies of previous writers with the results obtained by our author. Dr. Flint supposes that "elevation of pitch has been mistaken for increased intensity," and it is through this error, he thinks, that previous writers have been misled. This can hardly be, for although but little stress has been laid upon the pitch of sound as a diagnostic sign, until Dr. Flint published his "Essay on Variations of Pitch," &c., yet both Walshe and Skoda have shown their intimacy with the subject, and have estimated its value. It cannot be, then, from ignorance of this character of sound that the difference in result arises. However, as Dr. Flint has shown the way, future investigations will determine the correctness and value of these examinations.

These results are so extraordinary that we present to our readers a brief, and yet as faithful a synopsis of them as possible. In the infra-clavicular regions, out of twenty-four cases examined, the inspiratory sound presented a greater intensity in fifteen cases, while the vesicular quality was more marked in fourteen cases upon the left side, the right side giving a higher pitch of sound in twelve of nineteen examinations. The expiratory sound was present in three cases, and more intense in two cases, upon the right side, while this phenomenon was not observed upon the left. It was prolonged in several cases

upon the right, and an interval between the two sounds of inspiration and expiration was observed upon the right in several cases, whereas they were continuous upon the left. The pitch was higher than the inspiratory sound, in eleven cases on the right, and lower in only a few instances. In the upper scapular regions, the inspiration was found higher in pitch upon the right side, while it was more intense and of a more marked vesicular quality upon the left, when these phenomena were observed. "The sound of expiration on the right side in a certain proportion of instances, is prolonged, more intense than the inspiratory, and higher in pitch, this being very rarely the case on the left side."

In the lower scapular and in the infra-scapular regions the results are the same : Inspiration more intense on the left side, with a higher pitch-sound upon the right, while the vesicular quality was more strongly marked upon the left. The expiratory sound was not found in either of these regions higher than the inspiratory sound. The sum of all these examinations is, that, where the inspiratory sound is appreciable, it is more intense upon the left side than upon the right, and has a more marked vesicular quality, while the pitch-sound is higher upon the right. From this it follows that the more intense the sound the lower the pitch, and vice versa. This is the substance of these examinations, which is very different from those of Barth and Roger, Gerhard, Louis, and others, and from this dissemblance require that they should be accepted with caution, but not necessarily doubted.

The sounds produced by the act of speaking, in the same regions as above designated, are also investigated by Dr. Flint, and are found to give in the chest uniformly a greater resonance upon the right side. The *résumé* of the phenomena incident to the respiration and the voice, in the healthy chest, is given as follows :—

"1. Infra-clavicular regions.—More or less of the characters of the bronchial respiration generally present on the right side. Greater intensity and more strongly marked vesicular respiration often observed on the left side. Vocal resonance greater on the right side in the larger majority of instances.

"2. Scapular regions.—Respiration more vesicular and in-

tense in some instances on the left side; and frequently presenting characters of bronchial respiration on the right side. Greater vocal resonance habitually on the right side.

"3. Infra-scapular regions.—The intensity and vesicular quality sometimes greater on left side; the pitch frequently higher on right, and rarely on the left side. The vocal resonance generally greater on the right side.

"4. Mammary and infra-mammary regions.—Greater intensity of the respiratory sound on the left side in a ratio a little less than one-half, and on the right side in a ratio of one-sixth. Vocal resonance habitually greater on the right side.

"5. Axillary and infra-axillary regions.—Respiratory sound more intense on either side in a equal ratio; the characters of the bronchial respiration presented on the right side in a small proportion of cases. Vocal resonance habitually greater on the right side."

In the foregoing pages we think we have presented the material part of Dr. Flint's book,—that part which appertains more especially to himself. In substance it has been before the medical public in the form of his Prize Essay, the present volume being a more extended and elaborate presentation of the same views. In the succeeding chapters upon auscultation in disease, we find no new views which are not obtained as a direct consequent of those given in the study of the physiological phenomena. The nomenclature of morbid sounds is mostly that introduced by Barth and Rogers, and the treatment of this subject is a fair *résumé* of the various views and hypotheses upon the physical causes and diagnostic value of these sounds. We have given so extended an abstract of the first section of the work, that we must necessarily omit any notice of this part, which presents nothing novel, nor can we more than allude to the fact, that the second part of the work is devoted to the "Diagnosis of Diseases affecting the Respiratory Organs."

The value of Dr. Flint's researches cannot be estimated at this day. They are *sub judice*, and require a more extended and equally faithful experimentation made in the same spirit of honest searching after truth which instigated the investigations made by our author, before they can be properly appreciated. A

higher estimate is given to the relative pitch of sound, both in percussion and auscultation, than we are inclined to award to this sign. It would not be surprising, if in the enthusiasm with which the author has pursued his investigations upon this point, he had given an undue prominence to the observance of this sign.

To the commencing student this work is valuable, for it presents our present knowledge upon the subject of auscultation and percussion theoretically, and as applied to the diagnosis of diseases of the air-passages, in a clear, perspicuous, and agreeable manner,—and to the student versed in the views of the schools, it offers new subjects for thought, and new facts for investigation.

J. H. D.

A Popular Handbook. Sight and Hearing ; How Preserved, and How Lost. By J. HENRY CLARK, M.D. New York : C. Scribner, pp. 351.

A lawyer cannot judge with entire accuracy of the value of a book like "every man his own lawyer." He is not aware of the extent to which people generally, are ignorant of the simplest principles of law and sees the glaring defects which must necessarily exist in it. It is incomplete, perhaps unsafe as a counsellor to replace his services, and he does not realize the amount of information actually conveyed by it to unprofessional minds. So it is with medical books intended for popular use, and we speak of this volume with all proper diffidence, remembering what we have seen among lawyers.

Dr. Clark's book, we think, will convey to unprofessional readers a very considerable amount of information concerning the structure, and the functions of the eye and ear, together with many useful cautions and suggestions. It frequently strikes us as being too crude and general in its statements, but we do not forget that it was written for those not familiar with these subjects. The treatment recommended is usually the simplest, for Dr. C.'s very judicious advice is, not to tamper with either of these organs. The hygienic suggestions with directions for the avoidance of evils from improper use, must be beneficial, and

we do not hesitate to commend the book to those for whom it was designed.

The preface of a book often contains much valuable information, and we always read it. This astonishes us in its third sentence, by the declaration that "the majority of books of every kind, however, are designed in some way to serve as an advertisement." We object to the careless structure of this sentence; we doubt its correctness when made in this sweeping way, and beg leave to suggest to Dr. C., that it is in exceedingly bad taste in this book, even if it were entirely true. The style of the author is occasionally careless throughout the volume, which is the more to be regretted that he shows himself able to do better. More attention to this will greatly improve the next edition.

E. H. P.

Sea Sickness. Its cause, nature, symptoms, and treatment: derived from experience and strict observation. By M^r. NELKEN, Doctor Medicinæ of the Faculty of Medicine in Paris, France, &c., &c. New York: Stringer & Townsend. pp. 32.

It is quite surprising that so few books exist which treat of the subject of sea-sickness. This comes to supply in part the deficit, and if possible, to relieve in a measure the suffering from this cause. Its directions, both hygienic and medical, are simple and concise, and will be of use to those who are to be exposed to this annoying affliction.

As to the causes of the disagreeable sensations known as sea-sickness, the author says: "That the long continued and violent motion of the ship, communicates its disturbing influence simultaneously to all the viscera and organs contained within the abdomen, thorax, cranium, and the spinal column, that according to the idiosyncrasy, in other words, to the peculiar structure and impressibility of the ganglion, pneumogastric, and cerebro-spinal systems of nerves in different individuals, various symptoms manifest themselves."

E. H. P.

NEW YORK MEDICO-CHIRURGICAL SOCIETY.

Reported for the MONTHLY by J. O. BROXSON, M.D., Secretary.

July 8th. The following case of tetanus was related by *Dr. Benjamin Lee*.

Solomon Jackson, aged 39, entered hospital June 3d, 1856, with tetanus, the result of a large sloughing ulcer on the inside of right leg. The spasms involved the entire system, and were purely opisthotonic. Felt less in left leg than elsewhere. Could separate the teeth about an eighth of an inch. Was unable to protrude the tongue, which was badly bitten, and to chew his food. Was very weak; pulse 130, weak and irritable. Tone of system, poor. Has had no evacuation for four days; sleepless; spasms occurred about every three minutes.

He gave the following history. In January last, a small tumor made its appearance at about the centre of the present site of the ulcer, which gradually increased till it burst. The ulcer thus made, spread with considerable rapidity. It was treated with poultices and salves, until about six weeks since, when he consulted a botanical doctor, who pronounced the sore to have been caused by the bite of a tree toad! and proceeded to cut away portions of it, whether merely to remove sloughs, or with a view to "cutting out the poison," I am not able to say. He, also, gave him an "Improved Healing Salve," and an "Improved Healing and Drawing Salve."

No benefit was derived from these applications, and on the evening of Saturday, May 24th, the patient began to feel cramps, starting from the leg and running up to the jaw. These gradually increased to their greatest intensity. The patient's countenance wore an expression of extreme anxiety. The following was prescribed, and a table spoonful given every second hour:

R	Spt. Vin. Gal.	fʒij
	Cinchonæ pulv.	ʒj
	Aq. puræ	fʒiv
M.		

Also—

R	Calomelas	gr. x
	Gambog. pulv.	gr. iij
	Ft. pil. no. 1,	

given at once; and—

R	Gum. Opii		
	Ext. Conii	aa	ʒj
	Ft. pil. no. 10;		

of which one was given every two hours.

A large bread poultice, with tr. opii ʒj and aq. ʒj, was applied to the ulcer. This was at 3 P. M. At 7, the leg feeling very painful, and as if the poultice scalded it substituted warm water dressings. 12 P. M.—Condition about the same; leg comfortable. Sleepless. Substituted for the opium and conium, the following:—

R Ext. Cannab. ind. ʒss
Div. in pil. no. 10,

and gave one every two hours.

June 4th, A. M. Pulse 98; has had some refreshing sleep since taking the cannab. ind. Great tenderness and distressing spasms of diaphragm, and in right iliac region. Applied to both warm fomentations of fol. aconit. No evacuation. Gave—

R Ol. Ricini ʒiiss
Ol. Tiglii gtt. ij

Increased the brandy and cinchona mixture to ʒiij. Continued the cannab. ind. as before.

P. M. Has vomited a large quantity of yellow, curdy matter, probably milk, which I had ordered him to take freely. Added a little calc. chl. to the dressing for the ulcer. Leg comfortable; spasms less frequent, but very violent, almost throwing him from the bed.

June 5th. Retention of urine; had passed no water since the previous night. Pain above pubes. Applied a moist, warm fomentation of hops over bladder. Prescribed—

R Pulv. Opii
" G. Camph. aa gr. iij
Ft. pil. no. 3;

two to be given immediately, and one in an hour. No evacuation. Dispirited; pulse more frequent and irritable. Mist. cinchon. was given every hour. Spasms a little less frequent. 10 P. M. Had passed water with considerable difficulty. Gave

R Hyoscyam. pulv.
Opii aa gr. ij
Ft. pil. no. 2.

June 6th, A. M. Has had a large, soft evacuation. Spasms diminished in frequency and violence; more confined to legs. Less trismus. Has not bitten his tongue for two nights. Still considerable rigidity of muscles of mastication. Leg painful,—probably owing to a change in the temperature. Increased the calc. chl. in the water dressing. Ulcer dark and foul in spots. Pulse 100; urination much easier; slept well.

10 P. M. Pulse 84, full and round; leg comfortable; spasms

less frequent, most severe in abductors of thighs, jerking the legs wide apart,—very slight in upper extremities or trunk. Bowels quite loose; four evacuations during the day, unattended with pain; micturition easy.

June 9th, P. M. Since last record the treatment has been as before. Yesterday, diminished the dose of cannab. ind. to gr. ij. every two hours. Ulcer generally clear, suppurating, and granulating. Spasms now felt only at knees. They appear to be principally in the vastus internus and sartorius,—feeling, as he says, as if they were dragging his knees together. They do not occur now more frequently than every ten minutes. Can protrude the tongue, if done carefully, without inducing them. Eat a little softened bread, to-day, with some comfort. Bowels free, owing probably to the cinchona. Pulse 83, full and soft. Countenance still anxious.

June 10th. Has slept well; spasms slight, not oftener than once in 15 minutes, induced by a sudden noise. Pulse 80. Alternated the cannab. ind. with opii et camph. aa gr. ij., to be given every two hours.

June 15th. Improvement still continued. Altered treatment as follows:

R	Cannab. ind. ext.	gr. xxx	
	Sulph. fer. exsic.	" ix	M.
	Div. in pill no. 30.		

Ol. Jec. Ascl. A table spoonful three times a day.

Since that time his improvement has been steady. He is now able to masticate his food without trouble. For a slight twitching in the sole of the foot, I, to-day, applied a fomentation of fol. aconiti which afforded almost immediate relief. The ulcer is still, however, in an unhealthy state, and he is liable to a relapse into his tetanic state. But I think that as far as that attack of the disease goes, he may be considered cured.

In answer to an inquiry *Dr. Lee* remarked, that no diuretic effects were observed resulting from the use of the Cannabis Indica.

Dr. Carnochan spoke of several cases of tetanus, which had passed under his observation, in one of which the inefficiency of chloroform as a remedial agent, was fully demonstrated. At least half a pound of the article was used with no other effect than to allay the spasmodic action for a time. As soon as its use was discontinued, the paroxysms appeared with equal if not renewed intensity, until at last the patient died. Recovery from true tetanus was a rare occurrence. He had seen some cases simulating tetanus, where-

in medicine was effectual. In one, wine and the carbonate of iron, produced a cessation of the spasms. Sometimes, a removal of the cause is productive of the happiest effects. Being called to see a child, who in running about barefoot, had pierced the sole of his foot with boxwood stubble, he found the patient suffering extremely with trismus, which had continued for five or six days. Suspecting the presence of a portion of the stubble in the bottom of the wound, he cut down upon and removed a small piece, which had been the exciting and continuing cause of all the disturbance. The child immediately began to convalesce. As regarded the case related by Dr. Lee, he remarked that he had never known a case of traumatic tetanus to occur after the twenty-first day from the reception of the injury, and if tetanus is liable to be produced by an ulcer, the case was certainly interesting.

Dr. Carnochan then exhibited two large and several small pieces of the frontal bone, together covering a surface of six and a half square inches, removed from a man, who had suffered a comminuted fracture by a falling bar of iron. The fracture involved a portion of the orbit, and infringed upon the parietal bone of the right side, wounding the branches of the middle meningeal artery. The injury occurred eight days before. At first, the man was stunned by the blow, but after forty-eight hours, he had been sensible and able to answer intelligibly. At the time of the operation for the removal of the bone, the man was inclined to sleep. The pupils of the eyes were not dilated. There was no febrile excitement, and not much sign of compression. His pulse was 45. With slight effort, the pieces of bone were removed with polypus forceps, no trephining being necessary. A coagulum of blood was found extending under the sound bone, farther than could be reached. All was removed, however, that was possible, and the parts gently washed by means of a sponge. No pus had formed, although eight days had elapsed since the injury. Immediately after the removal of the bone, the pulse arose to 80. The prognosis was doubtful.

Dr. Boulton presented the stomach of a woman, who tired of a life spent in drunkenness and prostitution, had taken arsenic, which was followed by death. The organ was presented, however, more to exhibit an abnormal condition or formation at its cardiac end, showing an irregular cyst, puffed up with air, appearing as if the inner coats of the stomach had suffered solution of continuity at some time, and the remaining tissues had become dilated into a pouch, capable of holding about two drachms. After examining the organ, Dr. Cox

remarked, that the appearances internally would indicate that an ulcer had existed at that point, and he was of the opinion, that such was the cause of the condition.

Dr. Cox presented, for *Dr. Leigh*, of the Nursery Hospital, a heart removed from a girl, aged 12 years, weighing eleven ounces, about twice the size of the organ in a healthy condition. Last winter, as was reported at the time of her entrance into the Hospital, she was affected with pains in her limbs and joints, which were considered by the physician in attendance, as "growing pains." The joints were also swelled, and she probably had endocarditis, associated with rheumatism. She was admitted into the Hospital on the 18th of June, suffering dyspnoea. Her pulse was rapid and the action of the heart was violent. The sounds were blended and gave a bellows murmur. The patient was anæmic and emaciated. The face became œdematous and the feet swelled. Digitalis was temporarily beneficial in controlling the action of the heart. Gastritis became developed and diarrhoea supervened, which was uncontrollable, on account of the irritability of the stomach. Enemata and suppositories were used without effect. The evacuations which were at first of a dark color, became mucus and blood. Violent pain existed in the gastric region. About two days before death, the heart's action became more natural. No delirium occurred at any period of the disease.

Post Mortem.—Examination, post mortem, found the lungs slightly congested; the stomach inflamed; the spleen enlarged to three times its natural size; the liver also hypertrophied, and some effusion into the cavity of the peritoneum. The heart, (which is spoken of lastly, it being before the Society) was found very much diseased. Its size, as mentioned before, was nearly doubled, the left ventricle dilated, and the auricle of the same side showed evident signs of inflammation. The mitral valves also, presented some evidences of inflammation having existed.

Dr. Cox also presented a portion of the ileum and colon of a child, one year and two months old, who but a few days before, was apparently well. The bowels were regular, appetite good, and no evidence of disease existed. It had been weaned four months. The first symptom was a slight diarrhoea. The gums were scarified, as they were red, swollen, and tender. The number of stools did not exceed three in the twenty-four hours, which were thin and bilious in their character. After the first day, the stools were more thin than at first, with less fecal matter. Until within eight hours of its death,

there were no symptoms of sinking or prostration, the pulse was rapid and the child's face, the afternoon before its death, wore an expression of suffering without any other evidence. There was no distension of the abdomen, and the child, throughout, rested quietly. A prescription containing camphor-mixture with two drachms of chalk-mixture to the ounce, had been prepared for it, a spoonful of which, once in six hours, had been given. It did not nurse as well or as much as usual the last two days.

There had been no vomiting until six hours before death, when it commenced to vomit, and cry as if suffering severe pain; the feet were drawn up, accompanied by two or three green evacuations, with spasmodic twitchings of the muscles of both extremities. Warm fomentations were applied to the abdomen, and a quarter of a drop of Magendie's solution of morphia was administered; after which, it rested quietly for two hours, sleeping at intervals. After this, the same symptoms returned, the mixture was repeated, but did not produce sleep. The little patient continued to sink, and died in a few hours. The specimen presents the glands of Peyer enlarged and inflamed; the solitary glands are slightly ulcerated, and the whole of the colon is very much inflamed. The Doctor remarked that he did not remember having seen an instance where so much disease had existed in a child, with so few symptoms.

CHRONICLE OF MEDICAL PROGRESS.

Case of Poisoning by the Seeds of the Datura Stramonium.—A boy, four years of age, having been at play, came into the house of his parents, complaining of thirst, and saying that his "tongue felt big," manifesting a very limited desire for supper. He was put to bed as usual. In a short time attention was attracted to him by a scream. Nausea soon supervening, an infusion of snake root was administered, which produced a cessation of the symptom, but others accompanying it being uninfluenced. Dr. Calkins, who reports the case in the *Boston Medical and Surgical Journal*, was called to the child, whom he found in great distress, with pulse 120, very restless, throwing his limbs in every direction. The pupils were dilated, the skin of a bright scarlet color over the face, body, and lower extremities. The appearance of the patient, the mother's history, and the fact of his having often complained when urinating as re-

lated by the father, caused Dr. C. to think that worms and a stoppage of water were producing the disturbance, for which he gave some simple remedies without effect. A large injection not producing an evacuation of the bowels, eight grains of calomel and six of jalap were administered. In three hours, catharsis not following, ten grains more of calomel and eight of jalap were given, with the effect of full emesis exhibiting the cause of all the symptoms. At last, a tablespoonful of the seeds of stramonium were thrown up, having been retained upwards of seven hours. The bowels began to respond, and throughout the copious watery stools were more of the seeds. The child recovered.

Dr. Calkins asks this question, "Does not calomel neutralize the effect of this poison, in a measure?"

The Nitrate of Soda in Peru.—It is well known that an enormous mass of the Nitrate of Soda exists naturally in Peru, in the districts of Atacama and Taracapa, a short distance from the Chilean limits,—a mass some feet in thickness and more than forty leagues in length. It is attributed by naturalists to the former existence of a lake or sea, which occupied this plain, no less than three thousand feet above the level of the Pacific ocean. Analysis of this mineral discovered an appreciable quantity of iodine and bromine, in the form of the ioduret and bromuret of soda and magnesia. The quantity was sufficient to give sensible reaction with an acidulated solution of starch.—PARODI. *Anales de Soc. de Med. Montevid.*

Uric Acid Calculi.—A man, sixty years of age, never having suffered any vesicular or urethral disease, for the space of two months experienced a frequent desire to urinate, which he accomplished without pain but with difficulty. The trouble increased until cystitis was established, for which he was treated and relieved, leaving, however, incontinence of urine. In this condition, after a time, he consulted surgical aid. The general health of the man was good. The urine presented none of the characteristics common in affections of mucous membranes, and though it presented acid reaction, it was not stronger than might exist in a normal secretion. The surgeon diagnosed the existence of recently-formed calculi, and it was of the greatest interest to the patient that they should be expelled, before their size

should demand an operation for their removal. In order to overcome the spasmodic action of the vesical sphincter, consequent upon the presence of the calculi, and to augment the secretion of urine—two indications demanding fulfilment—the surgeon prescribed the use of the tincture of opium, and large potions of the infusion of barley and linseed, in which was a small quantity of the spirits of nitric ether. Instructions were given him, that in voiding his urine he should always place himself inclined forward upon his knees in a tepid bath.

In a few days, by following these directions, the patient expelled by the urethra three calculi, of the size of a *poroto*.

The expulsion of the calculi was productive of complete amelioration of the symptoms. By analysis, the concretions were found to be *pure uric acid*.—Munoz. *Anales de Soc. de Med. Montevideana*.

Quintuple Birth.—The wife of a guard in the service of the North-western Company, Birmingham, was safely delivered of five children—three boys, alive, and doing well, and two girls born dead.—*Med. Times and Gaz.*, April 19, 1856.

Cancer of the Uterus.—M. Leroy d' Etiolles who has studied cancer for many years, made the following statements at a session of the Medical Society of the Department of the Seine, held on the second of May last.

"Cases of cancerous disease to the number of 2,781 have been sent to me by 185 French and foreign physicians and surgeons, at the head of hospitals, or having very extensive practice.

Of these cancerous patients 633 were men, and 2,148 were women. Of this number, cancer of the uterus occurred in 684, whose ages were as follows:—

From 1 to 20 years,	-	-	-	2
" 20 " 40 "	-	-	-	66
" 40 " 60 "	-	-	-	345
" 60 " 90 "	-	-	-	271
				684

The duration of the disease is not given in 376 of these cases.

Death occurred within a year in	-	-	-	59
" " in from 1 to 2 years in	-	-	-	64
" " " 2 " 3 " "	-	-	-	49
" " " 3 " 4 " "	-	-	-	36
" " " 4 " 6 " "	-	-	-	41
" " " 6 " 8 " "	-	-	-	28
" " " 8 " 12 " "	-	-	-	19
" " " 12 " 16 " "	-	-	-	7
" " " 20 " 30 " "	-	-	-	4
Beyond 30 years,	-	-	-	1
Duration not specified by the observers,	-	-	-	376
				684

The following table gives the ages of patients admitted to the hospital of La Salpetriere from 1834 to 1842. There are recorded on the registers of the hospital a very large number of cancerous cases with no mention of the organs affected. It is therefore probable that the total number of cases of cancer of the uterus admitted to the hospital during the period of nine years is greater than appears from this abstract.

At 5 years,	-	-	-	-	-	-	1
" 20 "	-	-	-	-	-	-	1
" 28 "	-	-	-	-	-	-	2
Between 30 and 40 years,	-	-	-	-	-	-	53
" 40 " 50 "	-	-	-	-	-	-	83
" 50 " 60 "	-	-	-	-	-	-	78
" 60 " 70 "	-	-	-	-	-	-	60
" 70 " 80 "	-	-	-	-	-	-	83
" 80 " 90 "	-	-	-	-	-	-	29
" 90 " 100 "	-	-	-	-	-	-	4
							394

Somebody may be edified by the following, which we take from the *Edinburgh Medical Journal*:

Carlyle on Medicine.—Oh, my brother, be not a quack! If, in the phrenzy of this modern locomotion, any living man be overtaken by the mishap of a broken leg, chirurgion-wise bring the twain splints into apposition, and let osseous sympathy do its proper work, hindering it not. But mark me, brother, lift thine hand only when it is a living man who complains. When a wearied, struggling, heart-sore son of Adam turns himself to the wall, like, but with more intent than, the crowned Hezekiah, disturb thou not his departing agonies with thy wretched ointments, gallipots, and other abominations that

stinketh. That man is wearied with this terrene, and its losses and its crosses, and bethinks him to flee away and be at rest in a better and far off country, and thou but troublest him in his upward flight thi her. It is, without controversy, the saddest thing in the world, and beyond remedy that is visible, that when humanity's plague spot is ambition ungratified, the leech says, Be of good cheer, lo ! here is Opodeldoc—or when the inmost soul is racked by the frailty named woman, said body-cobbler nates down on paper, six inches by four, certain cabalistic characters which none but 'pothecaries can interpret, but which has Quinine for its refrain—or when the victim sees nothing but the blackness of darkness in his ledger, the guinea adviser cries peace, peace, even Rhubarb is at hand ! Miserable comforters are ye all ! When this universe was younger by the matter of three hundred years, William Shakespeare sorrowfully asked you and yours if you really could minister to a mind diseased, and since then you have groped about in nature's laboratory till you have educed (or if you did not, Harvey for that matter,) the dynamics of the blood, purification by cow-pock, and also various compounds tending to insensibility ; but mind, mind eternal, immortal, invisible, is as far off from your unguents as ever. It will none of you. Bethink you now, my brother, and let us reason together. If a flower be plucked from its stem, and flung on Macadam's high-way, will galvanism, eye-salve, mandragora, or other pestilencies, restore its green glitter, its holy tints or its sweetest flavor. Yet will you try your sorry craft on unstrung woman, and seek to bring her withered heart into unison with the spheres. You cannot restring a poor flower, with its simple mechanism of sap ascending and descending in curious capillaries, but yet you will experiment, and, good sooth, persist, till tipstaff, Death, has played you off the board—you will persist, I say, in playing with acidities in the bag of the stomach, unmindful of that great heart-burn which is drying up the fountain of life, of tears, of joys, and of sorrows. Caesar, Cromwell, Napoleon, these and other notables, you will preach to them your gibberish about starch corpuscles, histologies, and other entities applicable truly to potatoes, corn, and esculents many, all of the earth earthy ; but the notables, I say, are messengers from the great intelligences above (not the less it may be that they themselves know not that fact to the full extent, at least), let *them* alone I say—they have a mission and a destiny to solve that you, with your pot-bellied vessels of colored water, lighted behind with gas-jets, dream not of. When *that* is fulfilled, but not till then, Francis Moore, physician, and other almanac celebrities, saying what

they list notwithstanding, they will, in the fullness of time, be exhaled and go thence. Stand thou then aside, for the eagles are on their way to the Mountains of Spices. The thing is not to be borne. A soul from one eternity, flits across this poor geological crust on its way to another eternity, and instead of reverently lifting its eyes and waving trees of palm, the poor College of Physicians counts time by seconds on a Geneva watch, and offers none other oblation than par-boiled senna leaves.

The *Lisbon Gazette*, of the 16th of March, gives a picture and description of a child, truly unique in the history of monsters. Feliciano da Assompção was born without limbs—either superior or inferior—or any appendices in their place. The child is now twelve years old. He has a clear and active mind, and an excellent memory. His weight is 8 kil. 355 (a little more than 20 lbs.) ; his height 0 m. 44 (about 17 inches) ; the greatest circumference at the base of the thorax, passing over the xyphoid cartilage, is 0 m. 54 (21 inches) ; the thorax is very flat ; the smallest diameter, at the epigastrium, is 0 m. 11 (4.29 inches).—*Gaz. Hebdom.*

EDITORIAL AND MISCELLANEOUS.

It is now more than six months since we alluded to some of the defects and most glaring faults in the mode of nursing in our hospitals. We then stated that we should seek another opportunity to speak of the same subject, but have hitherto preferred to wait for a more deliberate consideration of the subject. At present we propose to speak of it fully and openly, being at the same time aware that we tread where few medical writers have had the courage to precede us,—where we are in danger of giving offence, of being misunderstood, and of being misrepresented.

Although it be repetition, we must give the following description of what a non-medical gentleman, of this city, found at one of our City Hospitals. He was in quest of a young man who had fallen, and was so seriously injured that he soon after died. This is his account :—

“ In a large and well-arranged room, in a row of wounded men, lay the one

I was looking for. His injuries had been dressed, but he was very feeble, and I was soon convinced that he would not live. After I had been with him half an hour, he wanted some water. A stool between his cot and the next contained medicines and drinks for both, a slight partition separating the two. Both patients could readily reach them, and help themselves. Even the brandy, which was to be administered in small quantities, at certain intervals, was there, and the patient could take it at any time, and in his thirst, or impatience, or delirium, he might have swallowed everything designed for him and his neighbor. This neighbor cautioned him against touching the medicines, lest he should take something wrong. A coarse Irishman, the nurse, now came along, and I said to him that he wanted a drink of water. 'Well, he can't have it; he's a taking brandy, and it won't do for him.' Of course I submitted, but the kind-hearted neighbor in suffering, said:

'He's faint, and a drop of water will revive him.'

The raw Irisher turned upon him and exclaimed, 'you shut up your head, will you.'

All the while I had been sitting here, a rattling noise from a room, the open door of which led immediately from this, had annoyed me much, and I had felt that it must be harrowing to the distracted nerves of these men, every one of whom was stretched out with broken or amputated limbs. At length I inquired what it was, and was answered that the attendants were '*playing dominoes*.' Over a large wooden table they were frequently shuffled, making a startling and grating noise most painful to the poor fellows, who must endure it for successive hours. The heartless cruelty of this noisy amusement, inflicted by men who are employed and paid to watch with tenderness over their suffering fellow-men, excited my indignation, and I freely expressed it on the spot."

We call attention to this case, not because it presents any striking features, but because every one who has served in hospitals or visited them very frequently, at other hours than those of the regular round of the physician, must feel that it is entirely truthful, and that he could match it with many instances from his own memory. That *one* such case should exist would be a disgrace to a Christian community, and yet these are the ordinary occurrences, the experience of thousands of sick people in our hospitals throughout the country. The question arises, is this necessarily so? It must be admitted to be a very great evil; is there no way of getting rid of it?

It is a very trite observation, that, in the care of sick persons, as much frequently depends upon the nurse as the physician. However skilful the latter may be, however wisely he may prescribe and direct, it is all of little effect unless his efforts are carefully and completely seconded by the nurse, not only in the giving of medicine—for that is a small part of nursing—but in the conscientious attention to the food, position, and general comfort of the patient. We have sat by a patient whom opiates could not soothe, and seen him lie quiet as we have passed our hand softly over his forehead. By others we

have sat for hours and held the hand, while they obtained needed rest, which every other means had failed to give. The patient who is so weak as not to be able to turn in bed, or to move even an arm, will suffer intensely because unable to change his position; when a slight variation in it will be followed by refreshing sleep. The involuntary starting of fractured limbs requires that the attendant should watch diligently to replace them in proper position. The prostration following fevers, and other exhausting diseases, demands for the recovery of the patient most careful watching, that too long sleep may not, by troubled dreams or too long abstinence from food or stimulants, allow the vital powers to be depressed to that degree which precludes restoration. And it is the nurse that must attend to all these particulars. If he neglects them, the physician loses his patient,—the patient loses his life. Trite, therefore, as is the remark with which we commenced this paragraph, it loses none of its importance when we reflect upon it. So true is it in some diseases, that if we fell sick of one of them (and yellow fever is an illustration of the class) under circumstances such that we could have but one,—either an intelligent and conscientious nurse, or the most skilful physician in the world, aided, by an ordinary hospital attendant, we would without hesitation choose the nurse. In the disease particularized, the quinine, the stimulants, &c., are very desirable, but though one takes them regularly, his chance for life is poor indeed if a sleepy nurse allows him to lie but a few moments too long uncovered, or with his arms or legs even exposed to the air only long enough to check the perspiration and rekindle the fever.

Who, now, are the persons to whom these duties are committed in all our large institutions? Had we all in a row those that serve in our city alone, it would be a sight unique, indeed. The men, with few exceptions, would be fit recruits for some Falstaffian regiment. The women, with more exceptions, but still in the vast majority, would prove worthy mates to the men. Lame, lazy, blind, rough, noisy, heartless, they serve only for their pay, and because they obtain a living easier in this than in any other mode. Their effort is not to comfort the sick and to save life, but to satisfy the steward or matron, or at least to avoid offending them. Such service is not what is needed, but is all that can be had under the ordinary mode. That such persons should prefer to sleep, rather than to pass the night bending over the bed of some unfortunate and suffering stranger, is not astonishing; or that their own comfort should be preferred by them to the arduous task of affording relief to others, is no more than one

would anticipate. If, then, the comfort of the patient is a thing to be thought of, if it is desirable to avoid every thing that may tend to shorten his life, and to use every means that may tend to prolong and save it,—if these be included in the objects for which hospitals are built, then, if possible, some better plan should be found for conducting this department of these public charities.

The faults of which we speak are by no means confined to the lowest officials, but must prevail throughout. The steward and the matron are not necessarily exempt from them, and while they exact scrupulous cleanliness and careful obedience to their orders,—things which must be observed to avoid the notice of the authorities from whom their appointment comes,—they are indifferent to everything else. The stupid "Irisher," with coarse language, refuses a little water to the parched lips of a patient "because he is taking brandy," as if that were any reason; while the sympathy of a fellow-sufferer calls forth language fitter for the pugilistic ring than a sick room. These things are not, perhaps they cannot be, known to the higher officers, but we doubt that if they were known they would call out any efficient correction. All, from the steward down, work for their money, and it is the rule where principle does not govern one, to do as little as is necessary in order to keep the situation. It is the voice of authority that is to be listened to, not that of duty or love to fellow-men. And so long as the authorities are content, duty does not trouble them.

The increase of wages will not produce much, if any, improvement in the state of affairs. Perhaps more intelligent persons will be found to take the posts, but the same selfishness will be manifest. Money cannot buy what is needed to make a good nurse; and while money alone is relied on as the inducement for qualified persons to enter upon these duties, just so long will the faults of which we complain continue to exist.

To what motive, then, can an appeal be made that shall call forth persons able and willing to perform these duties? Without hesitation we reply, to religious principle, and to this alone. Scoff as much as you choose, ridicule it, laugh at it, doubt it, it remains still true that this, and nothing else, can furnish to our hospitals a corps of non-medical officers able and willing to perform their duties fully, faithfully, and intelligently. This alone will enable one to bear with the querulousness of sickness, or to endure fatigue and loss of sleep that a stranger may have less pain or may be able to obtain some repose. But religious principle will furnish this class of persons, and

this will sustain them in doing all that a kind heart suggests and that duty demands.

To obtain such nurses, to furnish to our hospitals such a body of attendants, in the place of the low-spoken, coarse, too often profligate, persons who now hover around the beds while superior officers are near, but desert the sufferer in his extremity,* is no slight task. It is probably not at once possible. It cannot be done at less expense to the institution, so that this stimulus cannot be used to stir up the indifference of the managers. On their part it must, also, be a matter of principle, and till it is, or till a correct public opinion demands the change, it probably will not be made. For this reason the duty is all the more imperative for us to broach this topic, hitherto untouched, we believe, by medical men in this country. In England, and on the European continent, it has caused much thought, and occasionally been advocated by the pen of physicians.

We say openly that we are of those who believe there are other objects in life which should interest one more than gaining money; and we can conceive it to be possible for persons to do, from a desire to be useful, that which they would not from any other cause. We can, therefore, conceive it to be possible that persons should, from a desire to do good, devote themselves to the care of the sick.

Without circumlocution, we at once say that there is, in our judgment, only one mode by which the sick of our hospitals can be properly nursed, and that is by placing this department in the hands of Sisterhoods, consisting of religious women, associated together for the purpose of taking care of the suffering, not with the expectation of making money, but with the desire to do good out of love to their Lord. But before going farther into the discussion of the subject, we propose to give, in as brief a space as possible, an account of these associations; for we know that very few of the medical profession, or of the public generally, have any correct notions concerning them.

The thought of every reader will perhaps turn at once to the only

* The following anecdote is given by very good authority: "A few years ago, a nurse from one of the great (English) hospitals was sent, on an emergency, to assist in a private family, and amongst many stories she told of the heartless proceedings that were carried on in the wards, and the utter absence she showed of any sympathy or tenderness towards the patients, she did not scruple to relate how, as death approached, they used to 'make short work of it' by removing the pillows from under the heads of the patients; thereby hastening the last moment, in order to save themselves the trouble of a few hours' longer attendance."

order of the kind which is known to any extent in this country. We mean the Sisters of Charity, of the Romish Church. But of these not very correct ideas are entertained. The Order of St Vincent de Paul, the formal title of the Sisters of Charity, was founded about the year 1629, and takes its name from the priest who was its originator. Châtillon in France, was the place in which it arose, but its members soon transferred themselves to Paris. Their first efforts were directed to taking care of the sick at their homes, the education of foundlings and young girls, and subsequently the care of hospitals. The first institution of this kind at Paris which they attended, was the Hôtel Dieu, and this they still have in charge. At that time they rented a house in the vicinity, for the purpose of preparing biscuits, jellies, fruits, and other luxuries, for the sick under their care, the hospital funds being insufficient for this purpose. Every comfort necessary for the patients was furnished by them. Two years from its foundation the Society numbered two hundred ladies. Subsequently women of a lower grade as to education were admitted, and performed the more menial duties, working however under the direction of the lady Sisters. Continuing with this arrangement, and working under the direction of Vincent de Paul and of their superior, Madame Le Gras, their numbers and their usefulness increased, their example exciting many others to establish societies for visiting the poor and the sick. In 1639, some of the Sisters were sent to Angiers to nurse in a hospital, and in the same year, Queen Anne, of Austria, requested to have some of the Sisters placed as nurses in the military hospital she established at Fontainebleau during the siege of Dunkirk. In 1652, when an infectious fever desolated Warsaw, the Queen of Poland sent for them, and they there nursed the sick and the dying, and took charge of those who were made orphans by the fever. Though thus extending, it was not till 1655, twenty-six years after its foundation, that the Society was established as one of the orders of the Roman Church, but its letters patent were confirmed by the legate of Pope Clement IX, five years later (1660). Since that time almost two hundred years have passed and the order has extended in every direction, till now it is estimated that its members number near twelve thousand.

We find the following account of the regulations of the Order in France; they are substantially the same everywhere. "The Sisters usually have no private means. They live with the poor whom they serve. They receive a small annual sum (£12 or £15) from the Bureau de Bienfaisance, of any town in France that may wish for

their services, or a small sum is granted to them from the Mother House. Those who wish to enter the Order are received without dower at the Faubourg St. Denis. All that is required is a small sum for their first dress; and whatever they bring in, is returned to them if they go out. Before they can be received it is necessary to ascertain that their life has been pure, and that there is no family stain. After having spent six months in their own dress, they adopt that of the Order, and they learn all the spiritual exercises, in order to keep the rules and perform the work of the institution. After five years of probation in all that the Order requires, they are allowed to take the simple vows, which are only for one year, and are annually renewed, March 25th, with the permission of the superiors."

In an exceedingly entertaining book, "*The Ins and Outs of Paris*," we find a sketch of them which will, we are sure, interest those who have not seen it, and will be re-read with pleasure by those who have. There is, we are assured on sufficient and impartial authority, no exaggeration in it:—

"I will take you to the establishment of the Sisters of Charity. Do not expect a convent with its monastic solemnities, its traditional *tourrière* with her large keys, its majestic Abbess, and its pealing organs. Where we are going, is simply a shabby looking house, in the small, dirty street leading from the Rue St. Honoré to the Boulevards, and from its vicinity to the church of that name, called the Rue St. Roch.

"Knock and enter. You tread upon a sanded floor—horse-hair chairs and sofas are around. At a table, piled with papers, sits an aged woman in the garb of the Sisters of St. Vincent de Paul—all black, except a cape of white linen, and a head-dress of the same material, somewhat like a sun-bonnet, but protruding further over the face.

Now we are here, what shall we say? The Superior looks up and waits.

"*Ma sœur*, we are foreigners, and we come but to look through the establishment of *Les Sœurs de Charité*, of whom we have heard so much."

"There is no establishment. We have no pictures, no sculptured altars. We cannot tarry to kneel on tessellated pavements before images of saints or martyrs. Our place is forever among the sick and the suffering, with the dying out-cast, with the wailing and abandoned infant. But you behold us here. This house is known to belong to the Sisters of Charity. Here I, the Secretary, am ever ready to receive all visitors; and in an adjoining room, are Sisters waiting to fulfil the mission of charity, at the first summons of my bell. To all, without distinction of nation, creed, or rank, are our services given. The poor and friendless, or the rich, whose selfishness has made a solitude around them; even to the degraded, dying of disease and vice, to the resigned Christian, to the raving blasphemer, to each, to all, do our sisters come, and, with tenderness, care, and patience, tend and heal the weary and suffering bodies, and often calm and bring to God the desolate and despairing.

"Ah! women, in your country, they tell me, *Monsieur L'Américain*, have claimed 'woman's rights:' but ours is the sweetest, noblest right of all. It

makes us equal to angels—angels, not such as poets and admirers call us, but God's angels, like those who ministered to Christ.

"You smile to hear me speak of poetry and admiration. You wonder that in this solemn garb, I should know anything of the world. But we are of the world. Our ranks are recruited from the highest as well as the lowest ranks of society. Our vows are not perpetual, until after a long and practical novitiate of many years. Five years is the usual term; and then, without the slightest blame, or a remark of any kind, a woman can, if she chooses, return to her family and to social life.

"It is neither despair, nor bigotry, nor tyranny, which gives us nuns of the Order of St. Vincent de Paul; but it is a vocation for charitable deeds, a tender pity for the ills of life, a desire to be of use to our fellow-creatures.

"I who now speak to you, am a widow. I am well off. I have children, and grand-children, married and prosperous. I see them every day. My presence does not check the mirth of their guests, though it may hallow the conversation; nor does my sombre black dress repress the lisping caresses of my grand-children. I have done my duty toward them all. They have their inheritance, they will have mine. But rather than spend my income and my time in frivolities, ill becoming an old woman, I give both to the great family of the poor and needy.

"Now I must show you the flower of our flock," and she tinkled a silver bell. The door of an inner room opened, and there entered, clad in the same garb as herself, a tall, graceful girl, of about eighteen. To describe the holy sweetness of the expression pervading a face faultless as to feature, dazzling as to complexion, would be impossible. Its apparition was like some pure and holy thought of our childish memories, evoked in an hour of worldly toil and tribulation. The vision, with its earnest eyes, looked straight at us, and smiled. The salutation, so easy, so elegant, was such as is taught in courts. We scarcely dared to speak.

"Sister Rosalie," said the old lady, "these visitors are from a far-off land—*bien loin, bien loin, au delà des mers*.—from America; and they have brought a tribute of charity, for the one of your charges who needs it most."

The vision smiled again—so soft a smile, yet beaming from the brightening eye, and mantling in the flushing cheek. It thanked us in words, though we listened but to the gentle voice; and it was not till she who had first received us repeated it the second time, that we understood that our gold piece was rejected, and that five francs was all that could be accepted. Then from the long, wide sleeves, a fair, soft hand was withdrawn, and in its rosy palm we placed, with reverence, our offering. Another slow and graceful obeisance, a frank "*merci!*" a smile which included all, and the vision vanished.

"That," said our hostess, "is the daughter of the Duchess de D——, the only daughter,—beloved, admired, happy. She has been here four years; one more, and she will return to her proper station. Young as she looks,—for 'tis not toil, but evil passions, that wrinkle the brow: pure thoughts prolong our youth—she will then be five-and-twenty; and in a few months afterwards she will bear the name and title of a husband as noble as herself.

"There was no peculiar circumstance or event which induced her determination of coming to us; it was the result of a comparison of the wretched lot of so many, with her own favored and happy fate. She felt as though God would

exact, for so many good gifts, something more than the mere giving of alms; and so she came among us—a saint in conduct, a child in thought, a woman in tenderness and long-suffering. Her *fiancé*—who is her cousin, and known by her from infancy—as he passes in his carriage, often sees her wading through the rain. But she turns on him her sweet smile of love and hope, and he feels she is protected by a higher power.”

Here we felt it right that our visit should end. We had already occupied too much of the invaluable time of the good Sister.

Examples such as this we had just heard related are not rare, either in the higher or the middle classes. The women of France, of all ranks, are actively benevolent. Does distress or sickness come upon you—go to one of these houses of the Sisters of Charity: and at whatever hour of the day or night, one of the Sisters will obey your summons. If you are rich, she will not ask, or even seek to know why you are alone, and have no help but from public charity and pity. If you are poor, she will bring such succor as the funds of their special branch afford. Then, if the case is beyond her means, she will have recourse to the assistance of a *dame de charité*.

Now a *dame de charité* is a lady of high position. Each section has a certain number of them. Marie Amelie, wife of Louis Phillippe, was a *dame de charité*, though, of course, her functions were filled by deputy. These *dames de charité* give amply from their own purses; they are the bankers of the Sisters of Charity. And when their own means are exhausted, they step into their carriages, and, with a large velvet bag, go round to every house within their district, begging succor for the poor and suffering. Their high names, their elegant toilettes, their winning manners, their splendid equipages, are all adjuncts in the cause of charity: and the poor cease to envy, when they see the use to which apparent extravagance and folly are put.”

The Order was introduced into the United States about the year 1808, by Mrs. Seton, the daughter of Dr. Bayley, and their first house was built at Emmetsburg, Md. Their rules are very nearly the same with those of the Order in France. The novitiate is for five years, after which they are allowed to take the vows of poverty, chastity, and obedience for one year only, and may, at its close, withdraw if they choose to do so. The central house is still at Emmetsburg, and from there the Order has extended to very many of our cities. At present they have the charge of hospitals in the following cities: Buffalo, Detroit, Donaldsonville La., Mobile, New York (St. Vincent's), New Orleans (Charity), St. Louis, and Troy, N. Y. If there are others which should be added to the list, we are not aware of them. They have infirmaries, however, in Baltimore, Milwaukee, and New Orleans.

In taking charge of hospitals the Sisters of Charity do not, of necessity, agree or attempt to do the whole of the labor. The lady Sisters have the oversight and direction of this portion of their labors, as well as the duty of attending to the religious instruction

which they afford, while the Sisters who come from lower stations in society, perform duties adapted to their standing and abilities. Below these, however, there are frequently hired nurses, not at all of the Order, but under the control of the Sisters. They do not, themselves, do everything, but they direct everything; and it is inevitable that their employées, whether male or female, should catch something of their spirit. Whenever it is needed, however, their personal attendance is given without stint, whether by day or by night.

Many other Orders of a similar character are found among the members of the Church of Rome, but so far as hospitals are concerned they very closely resemble that of St. Vincent de Paul. It is not, therefore, necessary to enumerate them. Concerning them all, this remains to be added, that with their efforts to relieve bodily suffering they mingle religious instruction, striving to induce the sick to improve the thoughts and reflections which arise in illness, and seeking to prevent them from failing to profit by their correction.

How different, then, must be the scenes one would witness in a hospital thus conducted, from those in almost all of our own institutions. Perhaps during the visit of the physician no very marked difference would be observable, but after he has gone the contrast must be striking. In the one, quiet, a grave cheerfulness, kindness springing from love, an anxiety to do all that can be done to solace the sufferers; while in the other, the noise of dominoes disturbs every one, coarse if not ribald jests are bandied about, harsh rebukes of expressions of sympathy, and an anxiety to do just as little as possible, and not draw on one the reproof of superior authority, or bring him in danger of a dismissal. To the dying, in one, kind attention to remove if possible a single pang, while the consolations which religion only can afford, are made to soothe the last moments of earth and fit the soul for its great change; in the other, cold neglect, the tongue parched for want of a drop of water, no words encouraging the poor soul as it enters the dark river, but the pillows taken from under his head, "to make quick work of it."

To those who recover, in one, suggestions of amendment of life, rebuke of evil, encouragement of good propensities, the trembling repentant supported till resolution gains strength, guarded from temptations and directed to the paths of safety; in the other, lessons of evil, encouragement of all that is bad, or at least no help to that which is good—no benefit from sickness, but rather, hardening.

Those who come out, from one, improved by their sickness, better fitted to be useful citizens and good Christians; those who come

from the other, assisted in the downward road. The one looked back to with sentiments of gratitude, the other remembered with shame and regret.

But if the desirableness of such a change is admitted, there still remains a very serious objection to placing the hospitals in charge of the Sisters of Charity. We refer, of course, to the fact that they are Romanists. To many, this would be sufficient to condemn all proposition to change from the present mode. This is not, in this view of it, a strictly medical question, but it bears on a change which is desirable for a strictly medical reason.

The Church of Rome has in its doctrines, as we believe, much dangerous error which we cannot but abhor, but it also has mingled with it not a little of truth. In its various religious orders, there is much that we should condemn, but there is much that we heartily admire. The good is mingled with the evil, but is not necessarily tied to it. There is, therefore, no reason why they should not be separated. Much less are we justified in condemning the whole as evil. The Order of St. Vincent de Paul has more that is to be commended and less that is objectionable than most others. Its members pass their lives in no cloistered seclusion, but in the duties of active charity. They strive to imitate our LORD in doing good. Their worship of the Blessed Virgin is, we believe, a most grave error and sin, but because of this their good deeds are none the less to be commended. Aside from their belief in the teachings, which are peculiar to and embrace the errors of Romanism, there is nothing objectionable in their Order, unless it be in respect of their vows, and upon this subject, when the period of the vow is limited to a single year, the best thinkers among Protestants are not unanimous. Perpetual vows are by all condemned. Why then may it not be copied in all that is good by Protestants? Shall we cease to worship God because the Church of Rome offers an impure worship? Shall we cease to care for the poor because Romanists are active in doing them good? To do so, though it would be in strict accordance with many other acts, would be in the extreme, absurd. Are not Protestant women as ready to devote a few years of their lives to doing good as are those who are Romanists? Does not love for fellow-men burn as strongly in the hearts of the one as of the other? We cannot do them the injustice to believe that it is not so.

But in fact such associations have been established by Protestants. In the English Church the attempts to form them have been repeated, but at this time we do not know of more than four that are in exist-

ence. These are all small, though doing all that could be expected from their numbers, and proving that it is possible for others beside Romanists to do good deeds in this way. On the European continent similar attempts have been more successful, and there are at this time, institutions of Protestant Sisters of Charity or Deaconesses, at Kaiserswerth, Paris, Strasburg, St. Loup, Dresden, Utrecht, Berlin, Breslau, Königsberg, Stettin, Stockholm, Ludwigslust, Carlsruhe, and Riehen. These stand in the order of their age ; that at Kaiserswerth, which has 190 Deaconesses, was founded by Pastor Fliedner, in 1836 ; the last in 1852. The whole number of Deaconesses is 426. This is small when compared with 12,000, but the Order of St. Vincent de Paul has existed for more than two hundred years longer than that of the "Deaconesses," and the progress which the latter have made is very encouraging.

Some brief sketch of the work accomplished by these different institutions, so far as relates to our particular subject, may be of interest. That at Kaiserswerth has a hospital with 120 beds, which are generally full. More than 600 patients (Protestants, Romanists, and Jews) have been received by it since its establishment. A lunatic asylum containing fifteen females, is also under their charge. An infant school, an orphan asylum, a day school for girls, a normal school, in which more than 400 teachers have been trained since 1836, and a penitentiary for released female prisoners and magdalenes, are the other directions in which their charitable labors are turned. But this is by no means the whole influence of this single institution. It is the mother of the others, and many of its members have gone to aid in establishing similar institutions. Omitting these, we find that the Sisters are sent to other hospitals, as follows : to Berlin, to Dusseldorf, to Elberfeld, to Barmen, to Lennep, to Cleves, to Mülheim, to Neuwied, Wetzlar, Kreuznach, Saarbrück, Dortmund, Hamm, Soest, Lippstadt, Uetz, Stettin, Frankfurt-on-the-Oder, Frankfurt-on-the-Maine, Worms, Erbach, London (in the German Hospital), Constantinople, Jerusalem, Smyrna, and Pittsburgh. At Paris in 1852, there were thirty Sisters, and they have in charge, a small penitentiary, a refuge for criminal or destitute Protestant girls, an industrial school, a hospital with thirty-six beds, an infant school, and an elementary day school. Two Sisters were at Marseilles in a hospital, and two were similarly employed at Rouen. At Strasburg they have a small hospital, treating 154 patients in 1852. Seven of the Sisters of this house are stationed in a hospital at Mulhausen, and two in a lunatic asylum at Neufchatel. At St. Loup the Sisters' hospital contains thirty

beds, while they also serve in hospitals at Turin, La Tour, Mirlan, Bessinge, Chaux de Fond, Berne, and M. Guggenbühl's institution for Cretins. At Dresden the Sisters' hospital has from fifty to sixty beds, while they also serve a hospital at Zwickan. At Utrecht the Sisters' institution treated 122 patients in 1852, and they served in the hospital at Nymwegen. The institution at Berlin was founded by the King of Prussia, who built for the Sisters a hospital for 300 beds. Their superior is the Baroness de Ranzau, who has herself been through the usual training at Kaiserswerth. More than 5000 patients have been treated at the hospital since 1847. Two Sisters have been sent to a hospital in Silesia, and two to one in Potsdam. At Breslau 235 female patients were received into the Sisters' hospital in 1852. At Königsberg their hospital contains thirty-six beds. At Stettin a children's hospital with thirty beds, forms the nucleus of the institution. At Stockholm, Frederika Bremer gave the first impulse to the establishment of the Sisters' institution. Jenny Lind has also assisted it, but it is still small. We do not know how many beds their small hospital contains.

At Ludwigslust the institution was founded by M^{lle} Helene de Bülow, who having gone through the training at Kaiserswerth, returned home and opened a children's hospital at *her own expense*, in 1847. The rulers of the Duchy afterwards came to her assistance, and built a large wing to her little hospital. We do not know the number of beds. At Carlsruhe in Baden, the Sisters have only twelve beds in their hospital, but they nurse the sick at their own homes. This, it may be mentioned, is a very common addition to their other employments. This institution is said to have sprung from the want of christian nurses, which was felt during the war in Baden, in 1849, and the ravages of cholera at Mannheim in the same year. The institution at Riehen, near Basle, was opened so lately as the latter part of 1852, with a hospital containing 18 beds. All of these institutions are, we believe, under the control of the Lutherans. There are beside, a few other hospitals that are served by christian women, who are not associated formally as sisterhoods.

These all prove beyond cavil, that Protestant women in Europe, at least, are quite as able and willing as Romanists to enter upon these self-denying labors. Let us now turn to our own country.

(To be Continued.)

In our number for July, we noticed a preparation of "Iodine Water," of which samples had been sent us by a gentleman of this city. In that notice we ought perhaps, in justice, to have stated that our attention was first called to the possibility of producing a concentrated "Aqueous Solution of Iodine," by Dr. Henry W. Cansdell, of Brooklyn, N. Y., who tells us that, for some years he has been trying experiments, with a view to effect that object, in Paris and in London, with only partial success, but more recently in this city with the most satisfactory results; having found in the Croton water of New York, chemical properties which neither the waters of the Seine or the Thames appeared to possess. Dr. Cansdell has sent us some of the "solution" prepared by him, which has been very carefully analyzed by a skillful chemist, and is found to be a really pure and concentrated "Solution of Iodine" in water, uncombined with any other substance, and of a strength ten times greater than had hitherto been considered practicable by any of the chemists of Europe or the United States; thus placing in the hands of the Faculty a simple, easily controlled, and effective means of introducing pure Iodine into the system of patients in all those diseases in which the use of Iodine is indicated. Dr. Cansdell states that he has used this preparation with the most beneficial results in many severe cases of scrofula, rheumatism, and particularly in obstinate cases of intermittent fever, where the exhibition of quinine and "Fowler's solution" had failed to produce their usual effects. And in order that the Faculty may have an opportunity of testing the therapeutical value of this newly discovered preparation, Dr. C. has offered to furnish a gratuitous supply to any or all of the hospitals in this city; and with a liberality of spirit that should at least entitle him to the thanks of the profession, he has pledged himself shortly to acquaint us with the mode of preparing this addition to our remedial agents, which we shall have much pleasure in communicating to the Faculty.

The 32d reunion of German Naturalists and Physicians, postponed last year on account of the cholera, will take place from the 17th to the 21st of September inst., at Vienna. The Committee of Arrangements met on the 15th of July. The Committee of Organization, Professors Hyrtl and Schrötter, to whom were added Professors D'Ettingshausen and Rokitansky, sent several communications

to the Assembly, from which the following data, which may be interesting to our readers, are extracted :—

The Austrian government have renewed the donation of 20,000 florins, (\$10,000), which it placed last year at the disposition of the Committee. A programme of the fetes to celebrate this grand scientific meeting, will soon be published.

The general public reunions, to which ladies will be admitted, will take place in the Redoutensaal; the sections will hold their sittings at the Polytechnic Institute.

All the foreign members will receive numerous presents of welcome, especially the seventh edition, enriched with steel plates, of the "Guide to Vienna and its Environs," by Doctor Schmydl. As an appendix to this beautiful volume, the Society of Zoology and of Botany, will give its Annual, containing the addresses of Naturalists and Physicians. Counsellor Knolz, Dean of the College of Doctors, has composed and has published, for this occasion, an elegant work, dedicated to the members of the Congress. It is an historical outline of the University of Vienna, especially of the Faculty of Medicine, and an abstract of the labors of the College since its new organization.

The Austrian administration will facilitate as much as possible all the formalities, ordinarily so rigorous of circulation and sojourn. Strangers will only have to show their passports at the frontier; their effects will not be examined at the Custom House, and the cards given by the Commissaires of the Congress, will serve them as permits of sojourn without the usual fee. With these same cards, they can visit the public collections, establishments, and monuments. A list will be distributed of particular collections of objects of art and of science, which their proprietors very liberally place at the disposition of the members of the Congress. The Society of Arts, of Austria, propose a National Exhibition, and the different learned societies open their rich libraries to visitors.

The Commune of Vienna, has had a commemorative medal struck, which will be delivered to the members of the Congress.

The Minister of Commerce has decided that special trains shall carry visitors to Mount Semmering, where the Commune of Vienna, will have prepared a hospitality, which the city of Bade will also offer them upon their return.

The days of the three general public sittings, grand dinners in common, will be served at the Hotel Zuno Sperl; upon the other days, strangers can, as they please, unite in small parties, make excursions into the environs, or enter into the interior life of the Viennese.

In order to avoid the difficulties of finding rooms in the hotels of Vienna, always full during the Summer season, the Committee, aided by the Commune, will ascertain all the private apartments which are to let, and proper measures will be taken, so that the moment foreigners reach Vienna, they can obtain every information as to rooms which are retained for them. Already many learned Viennese, following the example of the Dean, M. Knolz, have offered to open their own dwellings to some of the most eminent visitors.

The Committee have divided the Congress into sections, as follows; and have made out the list of persons who have offered their services as officers :—

Section I.—Mineralogy, Geognisee, and Paleontology. Chairman, Haidinger; Secretary, Leydoldt.

Sec. 2.—Botany and Vegetable Physiology. Chairman, Fenzel ; Secretaries, Kerner, Reissek, Pokorny.

Sec. 3.—Zoology and Comparative Anatomy. Chairman, Fitzinger ; Secretaries, Kner, Frauenfeld, Wedl.

Sec. 4.—Physics. Chairman, D'Ettingshausen ; Secretaries, Grailich, Pick.

Sec. 5.—Chemistry. Chairman, Redtenbacher ; Secretaries, Pohl, Hinterberger, Schneider.

Sec. 6.—Geography and Meteorology. Chairman, Kunzek ; Secretary, Schmidl.

Sec. 7.—Mathematics and Astronomy. Chairman, De Littrow ; Secretaries Hornstein, Gernert.

Sec. 8.—Anatomy and Physiology. Chairman, Rokitsansky ; Secretaries, Engel, Patruban.

Sec. 9.—Medicine. Chairman, Skoda ; Secretaries, Sigmund, Priess.

Sec. 10.—Surgery, Ophthalmology, and Obstetrics. Chairman, De Dumreicher ; Secretaries, Blodig, Jæger, Späth.

This is the Society to which Dr. Glück, of this city, was accredited by the American Medical Association, as its representative. Dr. G. is now on his way to Vienna, and we hope before a great while to give our readers interesting letters from him. What would our government say to a proposition to appropriate 10,000 dollars to such a purpose.

It is announced that Prof. Allen has resigned the Chair of Anatomy in the Pennsylvania Medical College, in Philadelphia, and that Prof. T. G. Richardson, of Louisville, Ky., has been appointed to fill the vacancy.

Dr. Richardson has long been connected with the Kentucky schools, and is favorably known to the profession as the author of a work on Anatomy. His appointment will, no doubt, prove an acquisition to the Institution, and advance its interests, especially among its friends in the West.

By imperial decree, dated July 1, 1856, young Vidal (de Cassis) son of the distinguished physician of that name, whom a premature death snatched from science, has been made pensioned pupil (with full pension), of the Imperial Lyceum. All who know the reputation of the father, while they regret that the son should need assistance, will rejoice that the Government has extended it to him.

Thirteen physicians of Piedmont died in the Crimea.